

# GOLF COURSE NEWS

THE NEWSPAPER FOR THE GOLF COURSE INDUSTRY

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Giant reed grass (above) is one of the many ornamental species used for both style and substance. See page 11.

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## NGF study compares maintenance budgets

By MARK LESLIE

JUPITER, Fla. — Golf course superintendents, often asked to "perform magic with the same old things," may find artillery for their budget struggles in a new National Golf Foundation report, according to its project manager.

"A lot of superintendents get hammered pretty heavily because they are in charge of the biggest expense on a golf course," said Jerry Hinckley, who coordinated the report, *Understanding and Comparing Maintenance Budgets*. "Member committees and various people are constantly demanding more, yet aren't always willing to pay for it. They want [the conditions] they see on TV, and their expectations are very high."

Dividing the country into four regions and showing acreages and budgets at actual courses, the report demonstrates the relationship between expenditure and the number of acres maintained.

Most golf courses, Hinckley said, are "investing fairly heavily in improvements and new equipment every year. If you decide not to put any money back into the facility, above and beyond the basic maintenance, you're actually slipping back."

A panel of eight highly qualified golf course agronomists surveyed a

Continued on page 16



Lake Michigan and skyscrapers frame the Family Dye's par-3 and practice-range project in Chicago.

## Dyes take their act downtown

By MARK LESLIE

CHICAGO — People stuck in congested, downtown Chicago with a mere 90 minutes on their hands will soon have a chance to play nine famous par-3s from the Family Dye.

The Vintage Group, formed by ex-Dye Equities president Charles Tourtellotte, is in the midst of developing a one-of-a-kind golf facility on a tiny bit of property that used to be the Illinois Central Railroad yards. Come next spring, golfers can walk through the underground pedway that connects all of the office

buildings and hotels in the area, take the elevator to the clubhouse and tee off at the Illinois Golf Center — a mere long drive or two from Chicago River and Lake Michigan.

Tourtellotte hired the Denver-based Perry Dye to design a nine-hole par-3 course because "Perry has a reputation for being able to work with small sites."

Tourtellotte has leased the 30-acre plot for 15 years from Metropolitan Structures and the Whitman Corp., the partnership that owns and manages Illinois Center,

Continued on page 26

## More pump manufacturers join forces

By HAL PHILLIPS

DALLAS — Following a distinct industry trend, Pumping Systems Inc. (PSI) and Flowtronex International have merged, promising immediate benefits to customers.

The merger follows two other marriages: Commercial Pump Service Inc. and Watertronics; and Syncroflo Inc. and Western Pumping Systems. Only Carroll Childers Co. of Houston stands "alone" among pump manufacturers in the golf industry.

### Flowtronex, PSI merge; Childers the lone holdout

Carroll Childers, who formed PSI in the early 1970s before leaving to create his current company, said the merger "comes as no surprise as there have been numerous such mergers and also closings of pump station manufacturers in recent years due largely to overpopulation in the industry and to downturn in

Continued on page 34

## Ex-Landmark employees re-emerge

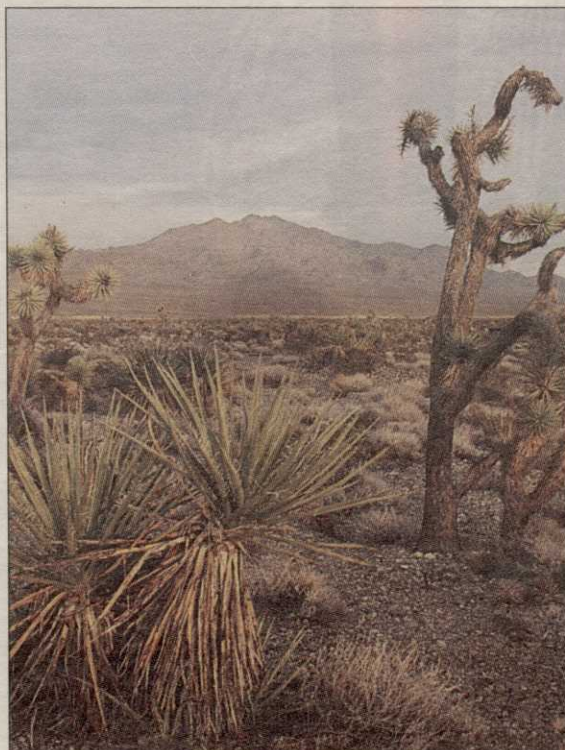
By PETER BLAIS

LAS VEGAS, Nevada — A proposed 72-hole golf resort on the Paiute Indian Reservation is among several major projects being developed by newly formed Landmark Golf Co.

Several former Landmark Land Co. executives teamed up earlier this summer to form Landmark Golf. The limited liability corporation offers design, golf operation and real estate development expertise. The firm already has offices in Palm Desert, Calif., and Scottsdale, Ariz.

In addition to the Las Vegas venture, the firm has

Continued on page 30



The Paiute Indian Reservation will be home to a 72-hole, Landmark-developed golf and gambling resort.



# IT'S A WHOLE NEW BALLGAME

Pumping Systems Inc. (PSI) and Flowtronex International proudly announce a new partnership,  
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## NEWS IN BRIEF

**BRANSON, Mo.** — LedgeStone will be the name of a 6,800-yard, 18-hole golf course to be developed here by the Arkansas firm of Cooper Communities Inc. The course will be the centerpiece of the proposed retirement and recreation community. First phase of the development will embrace 800 acres.

**PIERCE TWP., Ohio** — Great Traditions, the developer interested in building a golf course here, still is weighing its options. Meanwhile, Pierce Township trustees have met with a representative of the consulting firm they hired to evaluate the feasibility of building a golf course on the 500 acres that once was Warnerton Farm.

**GRANTS, N.M.** — While the soon-to-be-opened 18-hole golf course adjacent to the New Mexico Women's Correctional Facility was receiving generous water treatment, parched prisoners inside the facility went without shower or toilet water for two straight Sundays. City manager Willie Alire assured prison personnel it wouldn't happen again.

**INDIAN WELLS, Calif.** — Last November, the Indian Wells City Council approved plans for a 18-hole, 600-acre country club known as The Reserve at Hidden Valley. Now, three Indian Wells residents have complained to a Riverside grand jury that the city is wasting \$10 million in public redevelopment funds on a private country club. The 1992-93 grand jury ended its term June 30 without concluding its review of the complaint.

**SAN DIEGO, Calif.** — Cobblestone Golf Group has relocated its offices to Del Mar near San Diego. The new address and telephone number is 3702 Via De La Valle, Ste. 202, Del Mar, CA 92014; 619-794-2602.

# Long-delayed Colorado resort takes giant step

## Special permit for use of national-forest land granted after 20 years

By PETER BLAIS

**STEAMBOAT SPRINGS, Colo.** — A massive golf/ski resort that has been on the drawing board for 20 years is about to become reality.

Developers this summer obtained a 40-year special-use permit from the National Forest Service to develop \$70 million Lake Catamount resort. Approximately half the complex will be on Routt National Forest land.

The federal permit was the last major roadblock in the way of the 7,000-plus acre project, which will eventually include two 18-hole courses, lift capacity to serve 10,000 skiers daily, 3,800 dwelling units, 1,000 hotel rooms and 250,000 square feet of commercial space.

All that remains is developing a master plan and securing financing, a process that should take about 18 months, said Richard Browne, spokesman for the developers.

"We could break ground as early as spring 1995," he predicted.

To survive, a Rocky Mountain resort must be a four-season affair, Browne said. The five-month golf season is too short for a new resort to survive without skiing. Likewise, the ski numbers don't work unless complemented by golf, he added.

"To survive today, you've got to have both," Browne said.

Developers will build roads and utilities the first year, Browne speculated. Course construction will probably start a year later.

"A golf course takes at least two years to build because of the short growing season up there," Browne said from his Houston office. "That means the courses would probably be ready for play by late 1998 or early 1999."

That may seem a ways off to most, but not to Browne, who has followed this project since it was first conceived back in the



An artist's view of the Catamount resort, upon completion. Ground should break in 1995.

*We wanted to use less than one-tenth of 1 percent of Routt National Forest. We thought the animals should be willing to share a little corner of that property.'*

— Richard Browne, developers' spokesman

early 1970s. That's when a pair of local Steamboat Springs developers dammed up a portion of the Yampa River and formed Lake Catamount.

The developers proposed a major ski resort that would draw water from the lake for use on nearby slopes. They envisioned hosting many skiing events if the Olympics came to Colorado.

The Olympics never came and the project languished in file drawers until the early 1980s when a group of former Steamboat ski resort owners and Mitchell Energy Co. of Houston formed a joint venture partner-

ship to revive the proposal.

They eventually convinced the federal government to designate 4,000 acres of Routt National Forest as a recreational sports area. They coupled the federal land with 3,260 acres they already controlled in Rabbit Ears Pass.

During the late 1980s and early 1990s, the various local, state and federal agencies involved in the project required a total of 110 public hearings.

"Getting that final environmental statement accepted was a laborious task," Browne recalled. "It brought out every environmental group. They all claimed we'd be messing up the environment."

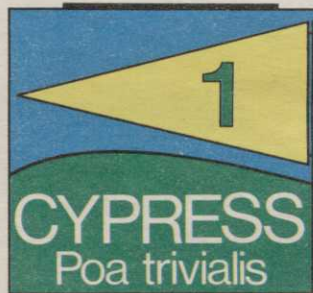
"A lot of them felt strongly that people just don't belong in the mountains, only animals do. We wanted to use less than one-tenth of 1 percent of Routt National Forest. We thought the animals should be willing to share a little corner of that property. They'd still have better than 99.9 percent of it."

Convincing environmentalists and government regulators that wildlife should move over, even if ever so slightly, didn't

Continued on page 26

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## Members weigh class action suit over maintenance

SHORT HILLS, N.J. — East Orange Golf Course members who feel trapped by what they claim is sadly neglected course maintenance are weighing a class action law suit against East Orange to recoup 1993 membership dues. Annual dues range from \$100 to \$450.

The City of East Orange contends that it cannot afford to spend \$1 to \$3 million to upgrade the golf course, especially when there would be little benefit to East Orange residents, and that \$500,000 is appropriated annually for the golf course.

## Mass. public course plan draws raves

WALTHAM, Mass. — Conversion of 70 acres of the former Metropolitan State Hospital's 360 acres into a nine-hole public golf course has drawn strong endorsement from city officials.

Said Mayor William Stanley: "People are breaking down the doors to play golf. There are more golfers than there are courses and driving ranges." Stanley said he expects a golf course to be a money-maker for the city: "Even if the city has to pay the state for the land, a golf course would over time bring funds into Waltham."

The property was abandoned last year, when the state shut down the mental hospital.

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## New PGA Hall to open in Sept. '95

JACKSONVILLE, Fla. — The planned World Golf Village, located along Interstate 95 between Jacksonville and St. Augustine, soon will welcome PGA World Golf Hall of Fame material now housed at Pinehurst, N. C.

The PGA of America has maintained full financial control of the World Golf Hall of Fame since 1986, but the facility steadily has lost money.

The International Golf Mu-

seum and Hall of Fame, its formal name, is scheduled to open in September 1995.

Developer Jim Davidson hopes to start building a bridge and ramps on a new I-95 interchange, the project's first step, by Oct. 15. Beyond a planned resort hotel, phase one of the project will include a golf course, PGA Tour Productions headquarters, wide-screen theater and a majority of the exhibits in the hall of fame.

## Turf war taking shape at Fort Ord

SEASIDE, Calif. — A Vietnam veterans group prefers parley to turf war with Seaside City Hall over possession of two Fort Ord golf courses.

David Pollock, president of the Vietnam Veterans of Monterey County, said that, under the McKinney Act, his group can claim Bayonet and Black Horse golf courses as a representative of the homeless.

If the group is successful, Pollock said, it would get the property for free.

If Seaside gets the courses, it

would need to ask for a five-year lease, Pollock said, and eventually it could cost the city \$20 million to acquire the golf complex.

The courses will be declared surplus next March.

Pollock wants his group to own the two golf courses so that revenue could be used to fund housing for homeless veterans and to establish a job-training program.

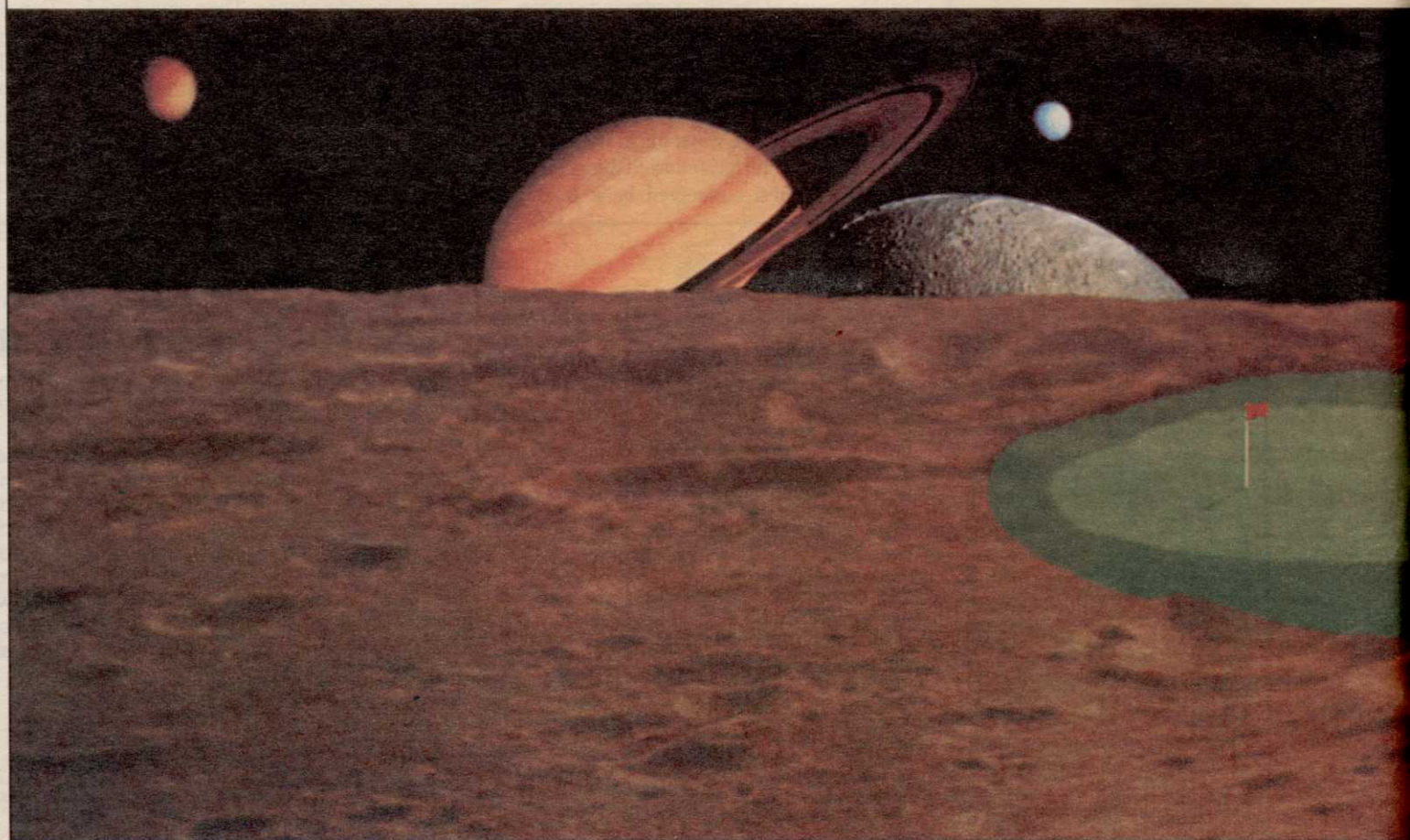
Vice president of a local manufacturing firm, Pollock is interviewing golf management firms in case the veterans get the property.

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## LPGA project hits environmental snag

DAYTONABEACH, Fla. — The development plan for the Ladies Professional Golf Association project has cleared state growth-management regulations, but Indigo — the plan for the master community surrounding it — is a mare of another color.

The Indigo amendment, addressing more than 15,000 acres of land that primarily extend west of 11th Street, was found not to be in compliance. The city is well into construction of the LPGA's championship public golf course, expected to open next summer.

The state Department of Community Affairs cited as major problem areas:

- The Indigo amendment does not adequately ensure protection of environmentally sensitive areas within the project, such as Rima Ridge;
- The amendment could promote urban sprawl by allowing leapfrog westerly development of Indigo after 2010 no matter how far along LPGA is;
- And the department suggests development instead should be regulated to flow east to west.

## Farm towns cooperate on course project

LEIGH, Neb. — It has been long-held tradition that farm neighbors and nearby townspeople pull together to build homes for those in need. Now four area towns have combined to lend helping hands for a nine-hole golf course southwest of Leigh.

The towns of Clarkson, Creston, Howells and Leigh have pooled their manpower and equipment, dubbed the project the Club 91 golf course, and plan to "tee it up" next

spring, or at least by June.

Greens, irrigation systems and fairways are about set, and seed should be planted before the fall. More than 80 people have pitched in.

The course is located on 75 acres of land donated by Frankie and Darlene Charipar of Leigh in memory of son Rick, killed in a tractor accident.

Project coordinators reached their \$165,000 fundraising goal over a two-month period last year.

## Court allows free play for course employees

PORTLAND, Ore. — Operators of Progress Downs golf course were cleared of charges they improperly allowed free play for part-time course marshals and starters.

A Multnomah County Circuit Court jury returned a verdict in favor of Double Eagle Golf Inc.

The city had charged that Double Eagle had allowed \$2,600 in free golf to starters and course marshals since it began requiring Double Eagle to keep records of free golf last May.

Double Eagle operates the municipal course under contract with the City of Portland. The jury ruled that the city had breached its contract with Double Eagle concerning course maintenance and development.

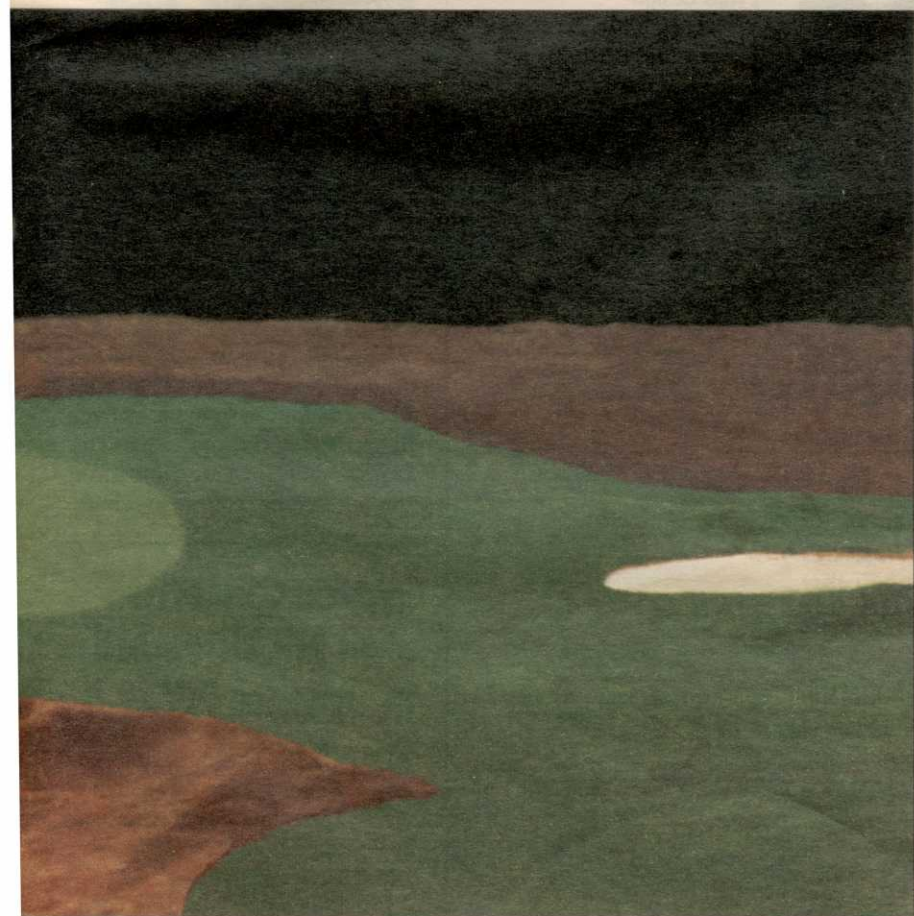
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CIRCLE #104

## Destination resort planned for Santa Rosa Island, Fla.

PENSACOLA BEACH, Fla. — A first-class destination resort and golf course on 372 acres here to encourage year-round tourism business has been proposed by the Santa Rosa Island Economic Development Council.

The plan recommends building a golf course if it can be done in conjunction with a destination resort and if it's environmentally and economically feasible.

A study indicated that initial economic impact of a 250-room or larger resort and golf course on Santa Rosa Island would include: \$73.7 million to \$84.7 million for construction; creation of 1,375 to 1,581 jobs, and one-time additional lease revenues to the island authority of \$1 million.

## Jackson to design Greer (S.C.) course

GREER, S.C. — Greenwood developers John Harrison and Danny Brothers soon will begin work on the residential community phase of Willow Creek Golf and Country Club, a planned 27-hole championship golf course on 600 acres in Spartanburg County.

The layout, which will include swimming and tennis facilities, will be at the intersection of Highways 101 and 417, six miles south of the BMW site. There will be about 450 single-family homes in the \$150,000-\$200,000 range.

Tom Jackson of Taylors will supervise course design and construction, and the overall land plan. Another Jackson design, The Cliffs Golf and Country Club, was recently unveiled in nearby Landrum.

Woody Morgan and Ed Phillips, both of Hartsville, are the course developers.



## Murder trial halts course hearing

COVINGTON, Ky. — Murder must out — get out of the courtroom, that is, before final arguments on proposed Devou Park golf course expansion can be heard.

Much legal maneuvering had taken place since mid-July over the \$1 million-plus addition. Contractor Hendrix and Dail Inc. was poised to start moving dirt and seeding July 15, and the city hoped to have the new nine holes ready for play in the spring.

Enter a murder trial. Golf

course debate between expansion proponents and opponents was ruled out of bounds until murder matters were settled.

Mary Ann Stewart, assistant Covington city attorney, said the city stands to lose some \$85,000 in greens fees if the golf course is not built this fall. Cost to the contractor — and possibly the city's obligations to the contractor — could run into the hundreds of thousands of dollars, she added.

Sorry, but murder has priority over tee times.

## Independence course in limbo

INDEPENDENCE, Mo. — It remains a waiting game for a public golf course near Salisbury Road and Missouri 291. Independence's first municipal course, in the works since the 1970s, still is in links limbo. The City Council has tabled a plan by the Golf Group of Independence to pay for the course through certificates of participation sold to investors.

Some council members balked at the idea tax money might have to be used to pay for the course. Added Mayor Bill Carpenter: "I don't envision the city going into debt, especially when we can't afford police cars and fire trucks and things like that, for a golf course."

## Tired of municipal losses, South Bend privatizes

SOUTH BEND, Ind. — Privatization is the buzzword swirling around the new city-owned Blackhorn Golf Course here.

Tired of operating its four municipal golf courses, the City of South Bend has turned over golf course management — and financial risk — from its Park Department to a for-profit entity.

Blackthorn will be managed by North American Golf Inc. of Chicago.

In addition, city-owned golf courses — Elbel, Erskine and Studebaker — may be leased individually for \$100,000 a year, each.

The city lost \$120,000 a year for the three golf courses last year.

## Unions oppose private operation of city courses

EDMONTON, Alberta, Canada — This city is out of bounds in seeking private operators to run its three golf courses.

So say civic unions and some golfers.

Edmonton is seeking private operators for the operation and maintenance of Victoria, Riverside and Rundle courses.

Union spokesman Les Steel said cities such as Winnipeg and Thunder Bay rejected golf course privatizing, and said that Edmonton should instead look at ways of promoting use of its courses.

## Tiburon GC to be Nebraska's first 27-hole complex

TIBURON, Neb. — Tiburon Golf Club is on its way to becoming Nebraska's first full-length 27-hole golf complex.

The new nine will be par 36 and between 3,500 and 3,600 yards. The current 18 holes measures 7,005 yards and is a par 72.

The new nine was part of the original plans in the 1970s. Ken Allen and four partners took over the project in the late 1980s. The 27 holes may be worked into three 18s with some course juggling.

## Water concerns stall Nicklaus bid in upstate NY

MONROE, N.Y. — The proposed Mansion Ridge project, featuring a 6,800-yard golf course to be designed by Jack Nicklaus, isn't out of the woods yet.

Jeff Rosenfeld, Monroe Town Planning Board chairman, said developers must address concerns about the project's impact on the environment, such as how it would affect the area water supply.

"Surrounding homeowners have expressed concern about the potential high water consumption," Rosenfeld said.

GOLF COURSE NEWS

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CIRCLE #140





## Show Update

## GCSAA predicts 16,000-17,000 for Dallas show

DALLAS — The Golf Course Superintendents Association of America (GCSAA) predicts that 16,000 to 17,000 people will attend its 65th International Golf Course Conference and Show here, Jan. 31 to Feb. 7.

More than 70 educational seminars, sessions and forums will be featured, along with a three-day trade show, and banquet featuring the Oak Ridge Boys and Crystal Gayle.

Nearly 60 one- and two-day seminars are scheduled to be held between Jan. 31 to Feb. 3.

Among those golf industry associations to conduct educational sessions are The American Society of Golf Course Architects, Golf Course Builders Association of America and the U.S. Golf Association Green Section.

...

The GCSAA will extend complimentary registration to the event to first-time members.

If you aren't a first-time member, "Early bird" discounts are still available for the conference — but the offer expires Oct. 15. Members are urged to take advantage, saving money on items from registration to seminars to the banquet and social program.

...

Oct. 15 is also the deadline for entries into the GCSAA's annual Chapter Publications Contest. The entries are peer-judged and winners announced at the conference.

Entries for another honor, the 1993 Environmental Steward Awards, will close Oct. 29. The competition is open to innovative programs instituted to protect, preserve and enhance the golf course environment.

Entry forms can be found in the September issue of *Golf Course Management* magazine.

...

A tour of Texas A&M University's Cotton Bowl and Research and Extension Station will comprise the Feb. 3 Turfgrass Tour. The Cotton Bowl's artificial turf was replaced by a surface built to USGA greens specifications last spring.

Drs. Milton Engelke and James Reinert will lead the tour of the research station.

...

Members are urged to send their entries for the GCSAA Golf Championship to the Lawrence, Kan., headquarters by Dec. 15. More information is available from the GCSAA Membership Department at 913-832-4480 or 800-472-7878.

Play will be held at Austin Country Club (a Pete Dye design), Barton Creek's Crenshaw/Coore Golf Course, The Hills of Lakeway (a Jack Nicklaus Design), and Circle C Golf Club.

GOLF COURSE NEWS

## Four more firms certified by GCBAA

CHAPEL HILL, N.C. — The Golf Course Builders Association of America (GCBAA) has certified a third group of golf course builders.

Those receiving official GCBAA certification include:

Bob Buky Excavating and Golf Construction of Mt. Washington, Ky; Dye Construction of California, based in Denver, Colo.; Greenscape

Ltd. of Menlo Park, Calif.; and Guettler & Sons of Ft. Pierce, Fla.

Fourteen firms have now passed the certification test administered by the GCBAA, according to Executive Director Phil Arnold.

"In time, the [certification] program will become the standard by which all construction firms will be judged," Arnold explained.

## Wetlands may kill Wisconsin proposal

BUENA VISTA, Wis. — A plan to build an 18-hole golf course here wasn't up to par on several counts, said county planning and zoning committee officials. "These types of changes tend to act as catalysts for further rezoning that can lead to urban sprawl," said senior planner Todd Gates.

In rejecting a request by Stevens Point resident Steve Kaminski to rezone 280 acres of land in the town, making it acceptable for construction of a golf course, committeemen also cited poor accessibility, physical site

constraints and inconsistency with the town's land use plan.

Added Gates: "Approximately three-fourths of this site is identified as wetlands. Wetland regulations would preclude dredging or filling of the site. This would prevent filling for greens, fairways or tees, as well as any structures."

The Buena Vista Town Board had voted unanimously to support construction of the golf course. "It's not in prime agriculture land," said Buena Vista chairman Hank Yokers. "It never has been; it never will be."

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# GCN to help publish USGA research findings

I'm pleased to announce that *Golf Course News* and the United States Golf Association Green Section will work together in the coming months to disseminate the findings of USGA-financed research.

The USGA spends nearly \$2 million per year on turf-related research. It allocated a full \$3 million to fund one comprehensive study of golf course maintenance practices and their effects on the environment.

The fruits of all this research are rolling in to Golf House — the USGA headquarters in Far Hills, N.J. — by the truckload, according to Jim Snow, national director of the USGA Green Section.

To help circulate the findings of these studies, *Golf Course News*

will publish a USGA-research-oriented column each month in the Maintenance section, starting with our January 1993 edition. Sometimes it will be a first-person commentary from a particular researcher. Other times it will be a story about a researcher whose particular turf-related experimentation should be of interest to superintendents.

Now, you can't thoroughly encapsulate most scholarly research efforts in a news story. So, if readers are interested in obtaining the full report, *Golf Course News* will always provide the necessary information.

The USGA will, of course, continue to publish its research findings wherever it pleases:



Hal Phillips,  
editor

The USGA *Record*, *Golf Course Management* and others. There is, however, a glut of information coming down the research pipeline, and *Golf Course News* is happy to assist in its publication.

...

Just as *Golf Course News* went to press this month, Environmental Protection Agency director Carol Browner unveiled her plans for pesticide reduction. Browner indicated the EPA goal for nationwide reduction of pesticide use is 75 percent by the year 2000. Wow!

While the report cannot be seen as good news, there are some important things to remember:

First, sources inside the agency have told me that EPA's assault on the pesticide industry will hit hardest in the agricultural arena. Of course, the turf world will also feel its repercussions, but not as severely.

Second, the EPA has an important public relations role in the new administration. Unlike its Bush Administration incarnation, which was more damage control, the EPA under Browner is looking to make points with the public — for her boss, Bill Clinton.

According to Steve Johnson, the EPA director of field operations who spoke at the RISE (Responsible Industry for a Sound Environment) Annual Meeting last month, the EPA recognizes the reduction of

Continued on page 10

## Veep Gore destroys designer golf green... The nerve!

Hey, whatever happened to values in this country? Where's our sense of history, of rightness, of appropriate behavior?

I understand why our kids can't read. Phonetics was taken out of the classroom.

I understand why there's so much trash on television. Heck, 51% of television executives feel adultery is just fine.

I understand how vanilla ice cream can still be the number-one seller. Ice cream eaters have perhaps lost their sense of adventure.

But the new vice president, Al Gore, tearing up a putting green in his new backyard? There can

be no reasonable explanation.

Hey, Al, didn't you check out that putting surface before you went ahead and defaced that green space? Didn't you call in the whole checklist of archaeologists, historians, ecologists, wetlands specialists, et cetera, before you changed the face of the landscape? (Since Mr. and Mrs. VP's staff doesn't return phone calls, we don't know the answer to this.)

The historian would have discovered that it wasn't just **any** green. It was a "designer-label" green. The fingerprint of



Mark Leslie,  
managing editor

Tom Fazio was upon it. Friends of then-Vice President Dan Quayle paid to have that green built to U.S. Golf Association specifications — at a cost of around \$18,000.

Mr. Fazio volunteered his services for the good of mankind, Mr.

Quayle, his family and guests, and for the good of the putting game of each and every one of them.

Our new veep comes in and what does he do? He has the green torn up and a volleyball court built in its place.

Whatsamatteryou, eh?

Gee whiz. If you moved into a house with a Picasso original hanging in the living room, would you take a knife to it? If Tipper walked into her new closet and spotted an original Bill Blass-designed dress, would she take scissors to it?

What has happened to this country, anyhow?

For his part, Tom Fazio thought it not a crime.

He took the news of the destruction in stride.

It's not a thorn in his side. As it might be yours or mine.

"If he's [Gore] not a golfer, he would look at the green and say, 'WASTED SPACE!' And if you have kids and groups of people who participate in weekend activities, volleyball's a neat deal," Fazio said.

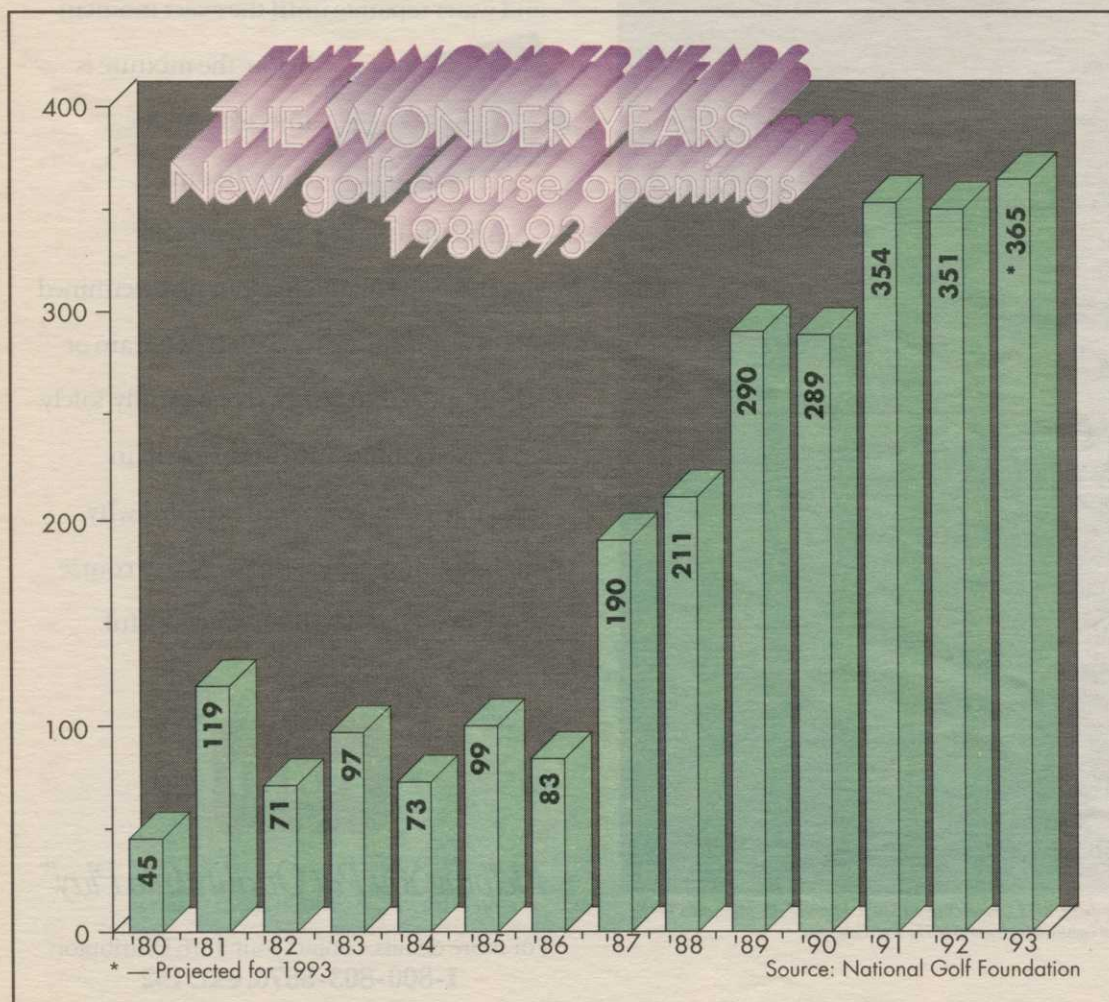
He even added: "Golf is a nonentity for a lot of people. And if you don't like golf, you may be embarrassed. He may invite dignitaries there who are golfers and would want to go out and putt, and want him to putt. He can't putt, so he's going to be embarrassed. So why should he have it? If I were him and not a golfer, I'd get rid of it, too."

"We, as serious golfers, take it so seriously. But here's the person in the second-highest office in our country, and it shows you how serious he thinks it is. Obviously, his opinion counts because he's the second in command. If he doesn't think it's so serious, why should we?"

Fazio pointed out that the guts of the green are still there. "What makes it a quality green surface is the drainage structure underneath, the soil mix and the bentgrass. I doubt they dug up the subsurface."

The 3,500- to 4,000-square-

Continued on page 10



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# The next leap in irrigation technology may happen under ground

By DAVID F. ZOLDOSKE

Sprinklers have traditionally provided the valuable link between lush landscapes and arid conditions throughout much of the golf world. The sprinkler industry continues to work on improving water application efficiency, thus better utilizing our precious resources. However, the practice of distributing water through the air and onto the turf has its limitations. The answer to some of these limitations may come in the form of subsurface drip irrigation.

Placing water beneath the soil surface via buried drip lines is slowly becoming the "preferred choice" of some urban irrigators. The reasons are many, including the absence of surface evaporation, as well as reduced weed growth, maintenance, injury, and vandalism found with using more conventional water application systems. The advantages of subsurface drip can add up to reduced cost for water, labor, chemicals, and liability for property owners.

Additionally, critical timing of sprinkler irrigation practices is eliminated because play or landscaped areas can be entered on foot or by vehicle during or immediately after an irrigation event. It no longer requires letting the field dry down or turning the system off during planned or special activities.

The idea of burying drip irrigation lines is not new. In the past, root intrusion and other problems have caused this approach to be limited in its application or abandoned all together. However, new strategies currently being explored at the Center for Irrigation Technology (CIT) appear to have overcome or successfully dealt with this obstacle, making subsurface drip irrigation an emerging alternative.

The use of subsurface drip irrigation technology may well be the future of irrigation in the coming years and decades. It begins to treat large scale irrigation projects as hydroponic environments. It touches on such issues as groundwater contaminates, drainage problems, water resource management, chemical use, etc.

## WHAT IS SUBSURFACE DRIP IRRIGATION?

Subsurface drip irrigation is a variation of traditional drip irrigation where the tubing and emitters are buried beneath the soil surface, rather than laid on the ground. Products being used today in subsurface drip irrigation on turf areas come in two basic configurations: hard hose and

porous tubing.

Hard hose products generally have wall thicknesses of 30 to 50 mils, with nominal inside diameters around one half inch. The emitter is either manufactured as an integral part of the tubing or is inserted later, and is typically placed at a repeated spacing interval of between 12 and 24 inches. The advantages to hard hose products are: strength and resistance to



David Zoldoske

kinking, punctures, and rodent damage. Also, pressure-compensating emitters may be incorporated into hard hose products.

Porous pipe products emit water all along the length of the tubing. There are literally thousands of places per meter where water weeps out of the tubing. This design has shown resistance to plugging by roots. The disadvantage is its

flow path is by far the smallest of the two configurations. This increases the likelihood of plugging by fine particles. It typically has the largest coefficient of manufacturing variability of the two configurations, which can be a major detriment because it prevents high distribution uniformities and high efficiencies.

Other design components of subsurface drip irrigation such as filtration and valving are very similar to those found in

conventional drip applications. Proper filtration only protects the emitter from contamination from the inside of the emitter. Unfortunately, soil particles and other contaminants can be drawn into the emitter from the outside. This generally occurs at system shutdown, when a vacuum can develop in the lines and draw water and inorganic particles back into the emitter. To keep this from happening, many subsurface irrigation

Continued on page 10



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## Phillips comment

Continued from page 8

pesticide use as an "apple pie & motherhood" issue — meaning it's easy to get behind.

In other words, simply endorsing the 75 percent reduction in pesticide use may achieve the desired results. Enforcement is a sticky business that too often goes unrecognized in the polls.

...

The editorial staff here at

*Golf Course News* bids a belated but heartfelt farewell to Simone Marstiller, who handled the Marketplace section and kept our publisher in line since the newspaper launched nearly five years ago.

Simone has already enrolled at Stetson Law School in St. Petersburg, where she's begun the business of torts and *prima facie*.

We've no doubt she will take the law world by storm, but we wish her the best of luck just the same.

## Subsurface drip irrigation: A peek at the future?

Continued from page 9

designs incorporate vacuum relief-valves that break the vacuum and keep water and inorganic particles from moving back into the emitter.

### FERTILIZATION THROUGH DRIP IRRIGATION

Subsurface drip irrigation has the ability to apply precise amounts of irrigation water directly to the plant roots. When fertilizers are injected into the water supply they too are

delivered directly to the plant roots. In this manner, subsurface drip irrigation has the potential to deliver low fertilizer rates over extended time periods, with increased nutrient efficiency.

When chemicals are added to the water supply there is a potential for undesirable chemical reactions, particularly with phosphorus and some micronutrients. It is always recommended that an adequate water analysis be done before injecting any chemicals contain-

ing phosphorus. The introduction of these fertilizers into the irrigation water can lead to the precipitation of phosphates, particularly when high levels of calcium or magnesium are present. This precipitation will instantly clog emitter pathways and will cause a premature death to the subsurface irrigation system and of course, lead to the collapse of the turf.

### CONCLUSION

With all the environment and economic pressures facing urban water users, subsurface irrigation holds the promise for answering many of these concerns. High water use efficiency of subsurface drip irrigation systems leave water available for allocation to other uses, such as enhancing environmental goals. It also reduces the deep percolation and associated ground water contamination and drainage problems.

In the urban environment, the reduction in risk of injury due to wet sidewalks or tripping on sprinkler heads may be enough to warrant its adoption. Maintenance expenses due to vandalism or breakage from heavy equipment can also be significantly reduced.

Finally, for urban applications, the ability to use effluent water without contact to the surface environment promises to be both an effective way to dispose of this water and provide water for turf and lush landscape. California is currently adopting legislature which will permit the use of graywater from urban dwellings to be used in subsurface drip irrigation systems. It seems clear that the adoption of subsurface technology should be cautiously, but enthusiastically, pursued as an appropriate technology to deal with increasing water, environmental, and economic concerns.

## Leslie comment

Continued from page 8

foot green fit into the existing grades of the lawn. Next to it was a depression for a bunker. But flat is "in" with the new administration. If it doesn't watch out it will be a "flat-liner" itself in three years — especially if it continues to treat golf so shabbily and loses the golfing vote.

Its statisticians ought to compare numbers — golfers to volleyballers. Who represents the most votes?

Mr. Gore, my advice is, go ahead and tinker with the economy, mess with the environmental regulations, fiddle with your "rebuilt" government, but please keep your hands off the real national treasures.

Come-on, get serious...

GOLF COURSE NEWS

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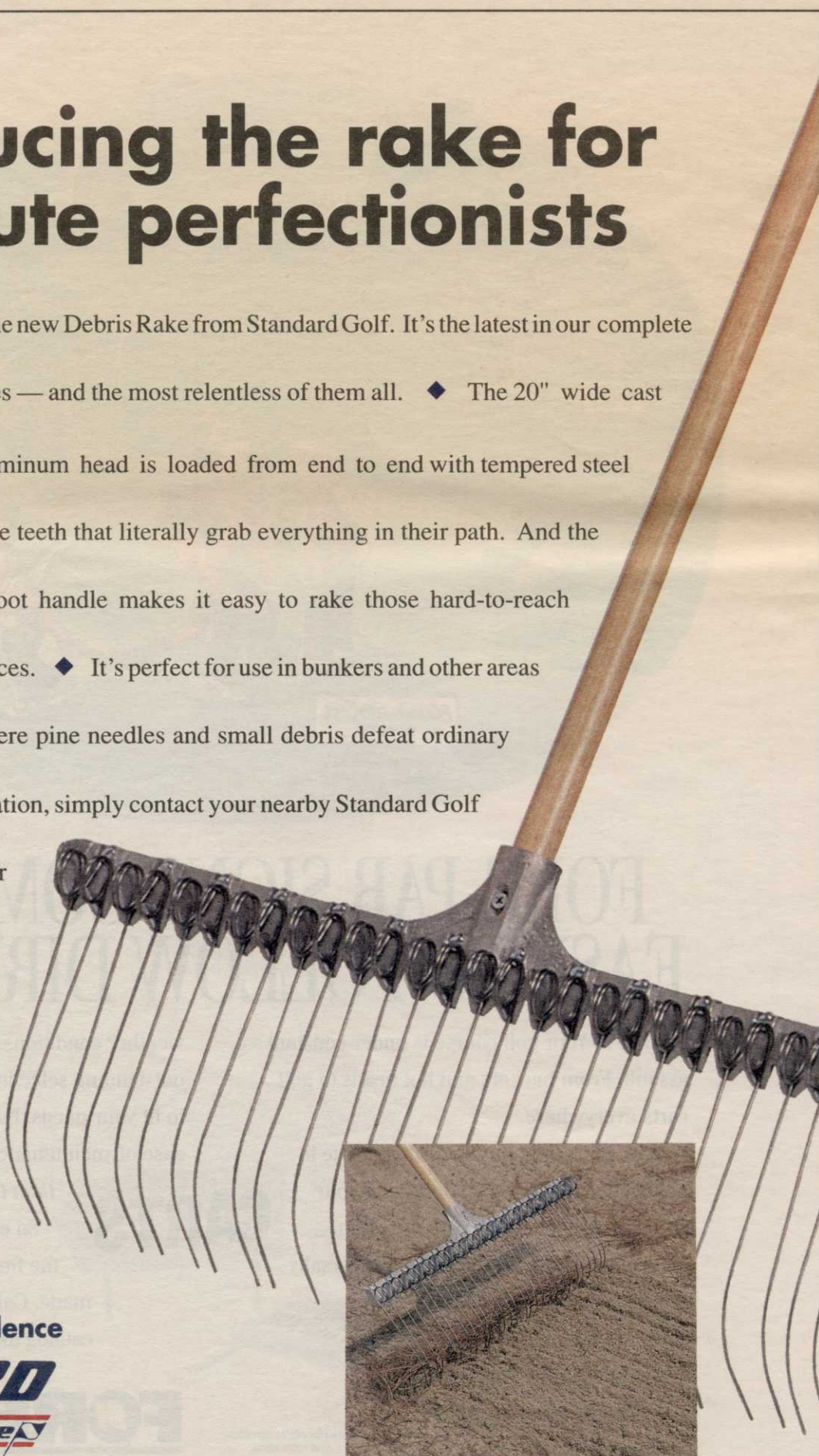
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# BRIEFS



## DIXY LEE RAY HEADLINING

SCOTTSDALE, Ariz. — Dr. Dixy Lee Ray, author of *Trashing the Planet* and recipient of the United Nations Peace Prize, will give the keynote address at the American Sod Producers Association's Midwinter Conference and Exposition at Wyndham Paradise Valley Resort here, Jan. 20-22. A former governor of Washington and chairman of the Atomic Energy Commission, Ray will speak on "The Science and Politics of Environmentalism." More information is available from the ASPA at 1855-A Hicks Road, Rolling Meadows, Ill. 60008; 708-705-9898.

## PESTICIDE GUIDE PUBLISHED

The 1993 *Pesticide Directory*, a guide to the producers, products, regulators, researchers and associates in the United States, is now available. Basic manufacturers and formulators are listed with a listing of their products and key personnel. In addition, agricultural colleges that work in pest control, Extension personnel, USDA research stations and independent contract researchers across the United States are listed with addresses. It costs \$49.95 and is available from—Thomas Publications, P.O. Box 9335, Fresno, Calif. 93791; 209-435-2163.

## GGCSA ANNOUNCES SCHOLARSHIPS

The GGCSA 1993 Scholarship recipients were announced recently, following interviews at the University of Georgia, Abraham Baldwin Agricultural College and Lake City Community College. Recipients of the \$1000 scholarships include Timothy Cunningham of Norcross, attending the University of Georgia, and Edward Lee Crosby of Omega who will also be attending UGA. Bard Salmons of Athens was chosen as alternate. Each receives a \$1000 scholarship, a plaque of recognition, as well as an expenses-paid trip to the GGCSA Annual Meeting, to be held at Kiawah Island Resort, S.C.



## RECYCLING PESTICIDE CONTAINERS

COLUMBUS, Ohio — Ohio State University instituted a pesticide container recycling program at its Turfgrass Research Field Day here Aug. 17. Superintendents could drop off their clean, empty pesticide containers, which Grower Service Co. will grind, granulating them for further processing. Eventually, they will be made into new containers or be put to other safe uses. The program was supported by OSU Extension, the Ohio Department of Agriculture and Ohio AgriBusiness Association.

# GCSAA battles being waged behind doors

By PETER BLAIS

The departure of top executives and officials of the Golf Course Superintendents Association of America has shed light on a behind-the-scenes battle being waged over the association's future.

The initial public skirmish was fought at last winter's annual meeting when members resoundingly defeated several proposed bylaw amendments and voted out two incumbent board members.

Opponents claimed the bylaw changes would have given the board too much power and diverted attention away from the superintendent by encouraging more non-superintendents to join.

That vote apparently established a battlefield pitting an old guard versus new guard. The old consisted of past expansion-minded presidents, their boards and Chief Executive Officer John Schilling. The new guard is headed by current President Randy Nichols, leader of what many view as the more inward-looking current board.

That conflict was partly responsible for the Arthur Andersen management study that played a role in the resignations of Schilling, senior directors Robert Ochs and Diana Green, and Immediate Past President Bill Roberts.

"The new board feels it is operating from a mandate that it received at the annual meet-

ing. I attended that meeting and heard no such mandate," said GCSAA Past (1990) President Gerald Faubel.

"To pull back when the needs of our members are being met just doesn't make sense. I believe our members are being served better than ever before."

Richard Fahey, president of GCSAA's Maine chapter, sees it somewhat differently.

"There does seem to be a change in the wind," he said. "Exactly why, I don't know. But there is a real difference of opinion out there about GCSAA's future."

"Branching off to attract members, like club managers, bothers a lot of people. We

Continued on page 20

# Ornamentals: A wave of the future in golf

By MARK LESLIE

For golf course superintendents familiar with bentgrass, ryegrass, fescues and such, the likes of maiden grass, fountain grass and giant reed grass might sound foreign.

Indeed, some ornamental grasses, like Chinese silver grass, originated on foreign ground.

But as superintendents search for ways to reduce chemical use and labor costs, more may find themselves planting these exotic grasses in the rough, around tee boxes, between fairways.

"They're an excellent plant to have on the golf course," said Richard Kaiser, superintendent of the five-course Fairfield Glade Community Club outside Crossville, Tenn. "Ornamental grasses don't require any attention, compared to shrubs, annuals and perennials. You create aesthetically pleasing areas and have lower maintenance costs."

"There's been increasing interest in ornamental grasses over the last several years," said Dr. Eliot Roberts of Sparta, Tenn., a retired soil and turfgrass scientist who enumerated some of their positives: "No insects, no diseases, no water, no fertilizer after they've gotten started, and no maintenance except to cut them back each year. Able to withstand sub-zero temperatures. Here are plants that will grow from five to 15 feet tall, opening up vistas, then gradually closing them out during the year. They change the colors of the



Giant reed grass, left, shows off its beautiful seedheads, while at right Chinese silver grass fronts plume grass.

landscape."

"I don't know of anyone in the country who's worked with them longer than I have, and I get more and more enthused by them," said Guy Robbins, superintendent of grounds at the University of Tennessee at Martin. "They're fascinating."

Robbins, who in 25 years has never once needed to spray ornamentals for insects or diseases, said he uses them "because of all the things they do for you. One thing, they provide a cheap [aesthetic] show. They give you virtually 10 or 11 months of color."

"By the time people are outdoors in the early spring, these plants are already coming up and growing. So we get early emergence, early interest and early presence. They look good all spring, summer and fall. They have very attractive blooms in late summer and fall. And when we have a hard freeze they turn

brown."

"As soon as the weather starts to cool off the inflorescences start to come out — beautiful, feathery inflorescences," reminisced Roberts, who got his first ornamental roots from Robbins. "They will last late into the fall, even into ice storms and still be beautiful."

Robbins added that many people plant ornamental grasses because of their languid movement and music in the slightest breeze.

Fulton Country Club superintendent Lynn Newton has been assisted by club member Harry Reams, who has made what Robbins termed "a horticultural extravaganza" at the South Fulton, Tenn., course. "We like them, their benefits and the look they give us," Newton said.

While Newton started using ornamental grasses to cover up unsightly areas, he quickly discovered they could

Continued on page 13

# Barrier island turfcare presents tough challenges

By MARK SMART

CORPUSCHRISTI, Texas — Good cultural practices are the key to managing a barrier island golf course, according to Carl Suding, superintendent of the recently renovated Padre Isles Country Club here.

The only golf course on the state's 115-mile-long Padre Island, it has been swamped twice during hurricanes and is constantly bombarded by sand, salt and ocean breezes.

"Grass doesn't grow well with so much salt," said Suding, who is vice president of the Gulf Coast Superintendents Association and a board member of the Texas Turfgrass

Foundation. "Turfgrass will tolerate only so much."

The Padre Isles course uses Tifdwarf Bermudagrass on the greens and 419 Bermuda on the fairways. Seashore paspalum grows naturally on the island, but is used only in some of the lower, saltier areas of the course. Suding said he has also experimented with Adelaide, but he promotes Bermuda because of its better texture and color.

To counter the salt Suding recommends paying very close attention to aerification and water management, including drainage

and use of wetting agents.

Padre Isles CC irrigates with effluent water from a nearby wastewater treatment plant. Salt water seepage raises the salinity to 2,500 parts sodium per million.

Care has to be taken not to over-water. "Watering too much will result in standing water, which dries out and leaves salt deposits in the soil," said Suding, "so we have to water as accurately as possible."

He uses gypsum and lime which contains calcium to help displace the sodium in the soil. Aerification helps the salt pass through

Continued on page 20



# Blackwolf Run's Lee: Pete Dye tracks tough to beat both ways

By MARK LESLIE

**K**OHLER, Wis. — When he was hired in March as golf course superintendent at Blackwolf Run, Michael Lee foresaw two things: Career advancement and the constant difficulty of maintaining a pair of Pete Dye-designed 18-hole courses.

The River and Meadow Valley tracks "are two spectacular golf courses that are not only challenging to play, but also to maintain," Lee said. "It's a Pete Dye golf facility, so it has a lot of mounds and steep faces that are challenging to keep irrigated and mowed down. And there are a lot of sand bunkers."

But Lee's major challenge is scheduling what he calls his "phantom crew" — that is, his 70-person staff that he orchestrates into a groundskeeping schedule that keeps them ahead, and out of sight, of golfers.

"It's a matter of working out the logistics," Lee said. "Golfers start at 7 [a.m.]. We start at 5 or a little later."

The crew must use that two-hour gap to get far enough ahead of the golfers — and stay ahead. Instead of the normal practice of assigning a zone of the course to each crew member, Lee has them leap-frog.

"We're using four to six walk-behind greensmowers per course at a time. We send out two groups of two and they leap-frog all the way from the 1st hole through the 18th. Tees are done the same way, leap-frogging," he said. Because Blackwolf Run is links-style, mower operators must go from tee to green.

The leap-frogging idea was implemented for two reasons, Lee said. "First, we thought we could justify it because of what we're charging our customers. They shouldn't compete with us [greenskeepers]. Second, for safety

*"We send out two groups of two and they leap-frog all the way from the 1st hole through the 18th. Tees are done the same way, leap-frogging."*

— Michael Lee  
Blackwolf Run super

reasons."

Lee said he has such a large crew because of the limited amount of time to do the work. Many are seasonal or part-time employees who work five to seven hours a day.

"There's no golf course to get back onto after around 10:30," he said.

Caring for the two courses — which were opened one nine at a time from 1985 to 1990 — is "pretty consistently tough," Lee said, but his job is an opportunity for him to combine two distinct skills.

While working with the now-retired Dr. Gayle Worf as a student at the University of Wisconsin-Madison, Lee was exposed to a lot of investigative work into turfgrass pests and diseases. Then, working with superintendents Monroe Miller at Blackhawk Country Club in Madison and Carl Grassl at Blue Mound Golf and Country Club in Wauwatosa, he learned about "the natural management side of the job."

"I consider Monroe Miller my mentor," he said, explaining that he worked for Miller while a teen-ager for five years. "He is the person from whom

## SUPER FOCUS



Michael Lee at Blackwolf Run.

I established my work ethic. I was very young. He taught me how to work. I enjoyed myself on the golf course."

Before graduating from college in 1987, Lee worked with Worf, who developed turfgrass pathology and disease trials at golf courses around the state, before the University of Wisconsin-Madison opened its research center.

"Whichever [courses] had the 'good' disease problems determined where we'd go," Lee said. "We got excited about disease — from a pathologist's standpoint. It was a very helpful experience in diagnosing turf disorders, seeing them in many different situations."

That experience has proven invaluable in his work as a superintendent, he said. Now he is melding that knowledge with high-tech equipment like the course's electronic weather station and radar tracking.

"It's not the only source of information. But it's an efficient way to track the weather. It keeps track of wind speed, leaf wetness, air and ground temperatures, those sorts of things, for a 14-day period," Lee said. "When weird things come up in the turf we can go back and see in the records what the

weather was like."

Another plus for Lee is that the Kohler company, which owns Blackwolf Run, also operates a landscaping business out of his office building.

"They are constantly monitoring insect life cycles using degree days. When the insects go from stage to stage you have a chance to control them. It's another tool. You can't make decisions just in the office. But it will help direct you to getting soil samples, or plant samples and make a decision," he said.

Lee said he is adding one major emphasis: Listening to the customers.

"We have a four-page evaluation sheet we're sending to selected golfers who golf at resorts like ours," he said. "I also work closely with the golf pro, Paul Becker. We talk about mowing long grass for better vision, tee conditions, reservations, ball washers, divots not being filled with sand — a lot of details that make a difference."

Blackwolf Run encompasses 400 acres on the southern edge of Kohler Village. It was named Best New Public Course in the United States by Golf Digest when it opened in 1988. Lee intends to keep it at "the top of the charts."

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## Extra tips on ornamentals

Ornamentals normally encroach eight to 10 inches a year. That's great for Richard Kaiser, who is using them to fill in certain areas at Fairfield Glade Community Club outside Crossville, Tenn.

And Guy Robbins, superintendent of grounds at the University of Tennessee at Martin, added: "You can get a bunch of them in a hurry."

"You plant one for \$5 and it makes a plant that year. The next year it's several times larger. Then you can divide from that one plant and get several."

For superintendents who want to confine them, Robbins said to cut them back in late February. That, he said, is their "only maintenance."

Superintendent Lynn Newton's crews at Fulton Country Club in South Fulton, Tenn., use hedge trimmers or chain saws and cut the ornamentals off at three inches above ground.

Dr. Eliot Roberts takes an ax to his bigger grasses but said the roots are shallow and easy to reach.

Seeded types won't grow in cold regions, Roberts said.

He warned to not get started with an ornamental grass that has marginal winter hardiness. "You want them to spread and relandscape areas," he said.

*Giant reed, plume grass  
Chinese silver grass all  
produce beautiful flowers and  
seedheads.*

— Dr. Eliot Roberts.



## The lowdown on high grasses

Giant reed grass, plume grass and Chinese silver grass have won the heart of Dr. Eliot Roberts at his home in Sparta, Tenn., where he is still busy experimenting in his retirement.

University of Tennessee at Martin Superintendent of Grounds Guy Robbins singled out maiden and fountain grasses as excellent ornamentals, and warned superintendents that he has been unimpressed with other types, many of which "resemble weeds."

Here's the lowdown, along with a recommendation from superintendent Lynn Newton and club member Harry Reams of Fulton Country Club in South Fulton, Tenn.:

- Giant reed grass: All green, it grows eight to 15 feet tall, sports wide leaf blades, and produces bamboo.

- Plume grass: Also called ravennae grass, it grows seven to 15 feet tall, has narrower blades, has a less heavy stalk, and shines a silver mid-vein down through its leaves.

- Chinese silver grass: It reaches four to six feet high, is very fine and wiry.

All three produce beautiful flowers and seedheads late in the summer, Roberts said.

- Fountain grass: Called pennisetum alopecuroides by scientists, it is "spectacular,"

Robbins said, starting to bloom a tan color in late July.

- Maiden grass (miscanthus): Though there are 25 to 40 types, Robbins has narrowed them down to "some we find more interesting over a longer period of time": miscanthus sinensis gracillimus, miscanthus gracillimus and variegated miscanthus.

"We really, really like miscanthus sinensis gracillimus. That's our pride and joy," Robbins said. "It has a fine texture, fountain-like growth, gets 4-1/2 to 5 feet tall, has a beautiful plume bloom. It's quite showy. It comes up early in the spring. In the winter when we have a hard freeze and it turns brown, it stands erect and the wind moving around produces an interesting sound."

- Hasta, yuca and zebra grasses: Newton and Reams also use these perennials. The broad-leafed hasta has low-greening foliage that blooms late in the year. Yuca's foliage reaches two feet in height, with a long stem that blooms white for two months a year and foliage that remains year-round. Zebra grass is similar to pampus but with a little wider leaf and horizontal yellow stripes. It comes out in early March and gains height and fullness throughout the summer, going dormant after the first frost or two in October and adding "a very nice effect for the winter. It gives a tan color but doesn't deteriorate."

## Ornamentals: A lot for a little in maintenance

Continued from page 11

prevent worn spots around tees "where we couldn't control the cart traffic without ropes and chains. So we use them to direct the flow of traffic."

"I don't like chains and posts and ropes to prevent carts from

going to areas."

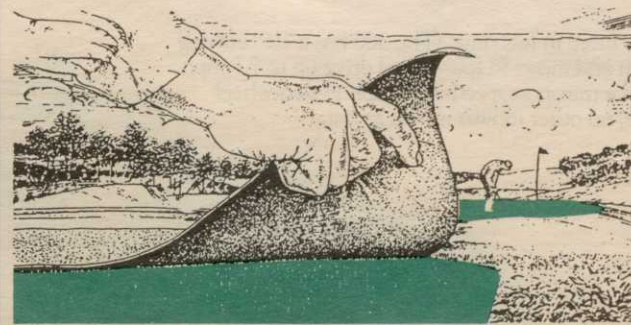
Fulton Country Club's 37 ornamental beds have received "a tremendous amount of praise" from visiting golfers, who have taken the idea back to their home courses, Newton said. He added that he and Reams have

shared information and ideas with golf course officials in Western Kentucky, Western Tennessee, Southern Missouri and Southern Illinois. "Some of our beds are five or six feet wide and 20, 30 or 40 feet long," he said. "Some are 30-by-30."

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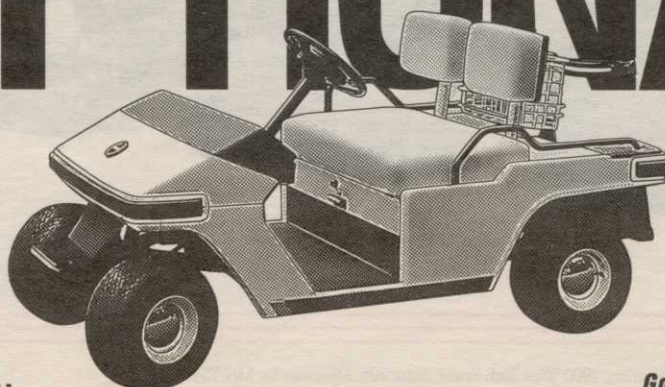
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## Tour of Duty

**JOHN FLEMING**  
The Olympic Club  
San Francisco, Calif.  
**Nabisco Tour Champ'ship**  
Oct. 26-31, NBC

John Fleming, 51, could be the "Nature vs. Nurture" poster child. On the genetic side, father Jack Fleming came to this country as a member of Dr. Alistair Mackenzie's construction crew. In addition to becoming Mackenzie's construction foreman on the West Coast, the elder Fleming designed several of his own courses in Northern California. Clearly, son John Fleming has golf in his blood.

"Unfortunately, I was dragged

out of bed every morning to pound stakes," John explains. "I was trying like hell to stay out of the business." He went so far as to take his undergraduate degree in philosophy (University of San Francisco) and his graduate degree in public administration/urban planning (Golden Gate University). But in the end, the lure of the golf course proved too much for him. He arrived at Olympic as an assistant in 1971. After being named head superintendent in 1973, Fleming has played host to a slew of prestigious events, including the

Continued on page 15

**NEIL THRAILKILL**  
Oak Hills Country Club  
San Antonio, Texas  
**HEB Texas Open**  
Oct. 14-17, ESPN

Neil Thrailkill, 33, followed the esteemed George Frye to Oak Hill in 1984 and never left. Frye was superintendent in charge of the Jay Morrish redesign at Oak Hill—an old A.W. Tillinghast design that had fallen into disrepair—and Thrailkill traveled to south Texas as an assistant. When Frye left for Kiawah Island a year later, Thrailkill was named head superintendent. Since then it's been

a parade of PGA Tour stops for the North Carolina State grad. Thrailkill, the product of Robbins, N.C., just outside of Pinehurst, has presided over nine Texas Opens, one Vantage Cup and the very first Nabisco Tour Championship in 1987, which he calls "the highlight of my career."

**THINGS TO LOOK FOR:** "I really think we have a reputation for our Bermuda greens," said Thrailkill, who had just finished a day-long meeting with a PGA Tour agronomist. "One of our guys was up at Castle Rock [site of The

Continued on page 15

**GARY MYERS**  
TPC at Summerlin  
Las Vegas, Nev.  
**The Las Vegas Invitational**  
Oct. 20-24, ESPN

Gary Myers went off to Purdue University with ideas about pursuing a career in engineering, but an experience working on a golf course in Tucson changed all that. He quickly realized golf course maintenance was the proper path, and he



enrolled in the Winter School for Turfgrass at the University of Massachusetts in Stockbridge. After graduating in 1978, he returned to Arizona as an assistant at Tucson National.

He accepted his first head superintendent's job at nearby Green Valley Country Club before moving on to the Desert Inn, where he played host to 17 PGA, LPGA and Senior tour events in eight years.

He's been at Summerlin since construction of the Bobby Weed/Fuzzy Zoeller design began four years ago. While it was being built, Myers spent nine months at Avenal and three more at Dearborn, studying the operation of TPC courses.

**THINGS TO LOOK FOR:** "I'm afraid there isn't anything too unique," said the 39-year-old Myers. "It's a stadium course. We just throw up some signs and ropes and have at it. We try to maintain it year 'round so we can do that."

"The mounding here isn't so severe, so it's easier to maintain than some other TPC designs. But because we're a TPC, we have extremely high, uniform standards—and that's where the degree of maintenance becomes difficult."

"We take a lot of pride within the TPC organization in competing with each other. In doing so, we've created a great situation for the player."

All TPC courses are run by PGA Tour Golf Properties, which bestows the TPC Golf Course Maintenance Operation of the Year Award.

Myers said one of his very top priorities is winning this award, earned by the TPC of Michigan last year.

**MADE - FOR - TV PREPARATIONS:** "We stripe our fairways throughout the year," Myers continued. "For the tournament, we create an X-pattern so the players get a uniform roll from all their shots. We don't do anything special because we try to maintain the peripheral areas as well as the playing areas."

"We just had the PGA Tour agronomist here last week. He pointed out that we could tee it up this week. And we try to keep it that way on a daily basis, all year long."

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## Tour of Duty

Continued from page 14

### Fleming...

1981 U.S. Amateur, the 1987 U.S. Open and five Pacific Coast Amateurs.

**THINGS TO LOOK FOR:** "The shade conditions here are unique, and they make it sort of difficult at times," said Fleming. "In terms of disease problems, we've had rains in October three of the last five years. So that could be a problem for us."

"We'll just try to firm things up so these guys can't fire at the flags all day. Of course, you receive a format from the PGA that's slightly different from that of the USGA. The rough will be three inches [for the Tour Championship], whereas it's four inches at USGA events."

**MADE-FOR-TV PREPARATIONS:** As you might expect from the superintendent at one of America's premier golfing venues, Fleming does little to prepare for the TV cameras:

"No, it's just prep work for TV crews that come in. We're not looking at a different mowing format, or anything like that. If you're into diagonal cutting on the fairways — as opposed to up and down — we do that anyway."

### Thrailkill...

International] and a bunch of pros commented that we had some of the best greens on tour.

"But I taped the Nabisco a few years back, and what I noticed was that we had the most gorgeous bunkers I've ever seen on TV."

Does he enjoy working with the PGA?

"This is my ninth one, and I know all the guys by know. We know what to expect from each other. It's real comfortable. Besides, they're traveling all over the world preparing tournament sites. I can learn something from these guys every time they come in."

**MADE-FOR-TV PREPARATIONS:**

"We do more soluble applications to give the fairways a bit more color. During the Nabisco, we sprayed all 18 fairways every day."

"We won't lay it on that heavy this year... Problem is, we have common Bermuda fairways which you can't stripe up real nice like you can on northern courses."

"I save an hour or more a day on maintenance time."



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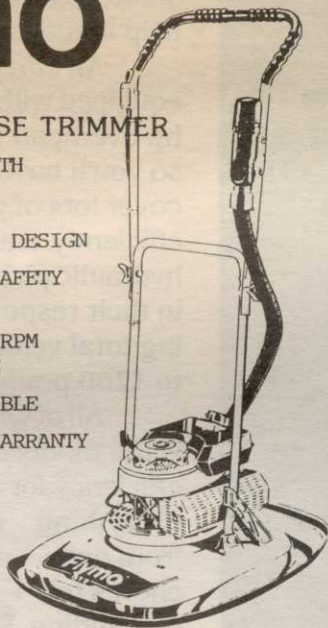
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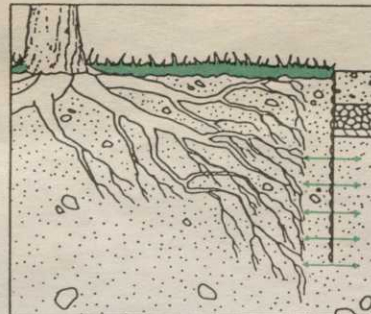
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# Study compares maintenance budgets nationwide

Continued from page 1

number of facilities known for high-quality maintenance programs in each region. The NGF foresees the publication as a help to golf course owners, developers, prospective buyers and club members.

For instance, it states:

- In the Southeast, water management districts are requiring new and existing golf courses to begin using reclaimed water within the next five years; and because equipment inven-

tories have swelled, many courses have hired a second mechanic.

- In the Midwest and Northeast, private new course development is shifting from the residential community/golf course type of development, to the strictly membership-owned golf course and country club. The economy, and lack of usable land, have caused developers to scale back to "core" golf course operations.

- Surface drainage of fairways and roughs is now a major

consideration for new course construction in the Northwest. Surface runoff, in combination with internal drains to lakes and water features, is used for irrigation. Because this was not done on many older courses, the result has been "soggy, often unplayable courses during rainy periods, with a resulting loss in revenue."

- It is not uncommon for courses in the Southwest to spend more than \$1 million for an irrigation system and pumping

station, with a drainage infrastructure in excess of \$200,000 per 18 holes.

"If used properly," Hinckley said, "the report provides operators with a benchmark for taking a course to the next level of conditioning."

He added that the book "emphasizes that your maintenance budget may be the biggest expense at a golf course. In fact, most healthy golf operations tend to have the maintenance budget as their most expensive line item—even above debt service.

"It also shows how complicated

maintenance is and how important it is to have good quality people."

Because of different terrain, weather conditions, grasses and membership demands, there is "no magic cost" for a well-maintained course, Hinckley said. "But if you are building a good golf course and you spend lots of money to get an expensive designer, it's all meaningless unless you spend the money necessary to maintain it."

The agronomists who conducted the survey provide an overview of each region, along with budget and labor trends, environmental factors concerning maintenance, water use, turfgrass use, pest and disease problems, machinery uses and professional training.

"The maintenance costs at a well-conditioned facility on the coast may be dramatically different from a facility away from the coast. This guide will help explain the variation and shape future cost projections," said Steve Batten of Palm Beach Gardens, Fla., who coordinated the panel of agronomists.

Among the panel's findings:

- In the Southeast, the installation of subsurface drainage systems has become standard practice.

- In the Midwest and Northeast, more and more public facilities are opting for bentgrass instead of bluegrass and ryegrass on their fairways and tees.

- In the Northwest, operators are frequently top dressing fairways to create better surface runoff and improve turfgrass and playing conditions.

- In the Southwest, most facilities being built have continuous cart paths for better traffic control and to save wear and tear on the course.

With the thought that superintendents might use it, the report's price was cut to \$20 for NGF members and \$35 for non-members, Hinckley said.

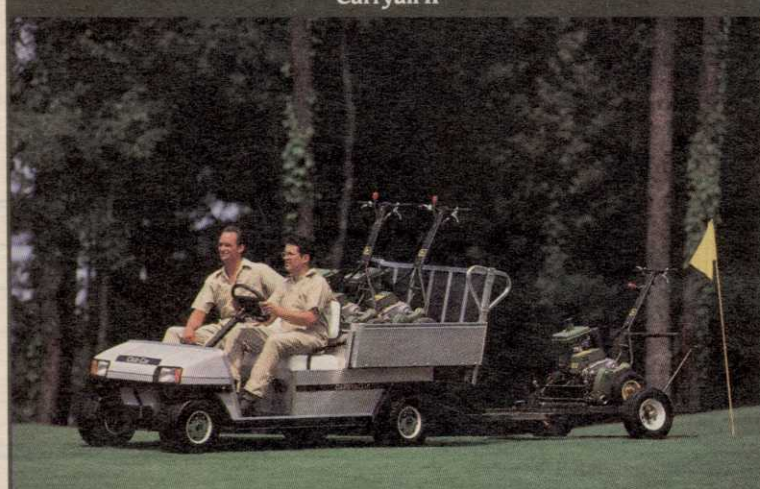
The NGF, located at 1150 South U.S. Highway One here, expects to release another publication in early October, "Golf Operations and Statistical Report."

"That could become the statistical book that this one is not," he said, adding that the daily-fee course report will be available first, followed shortly thereafter by the report on private courses.

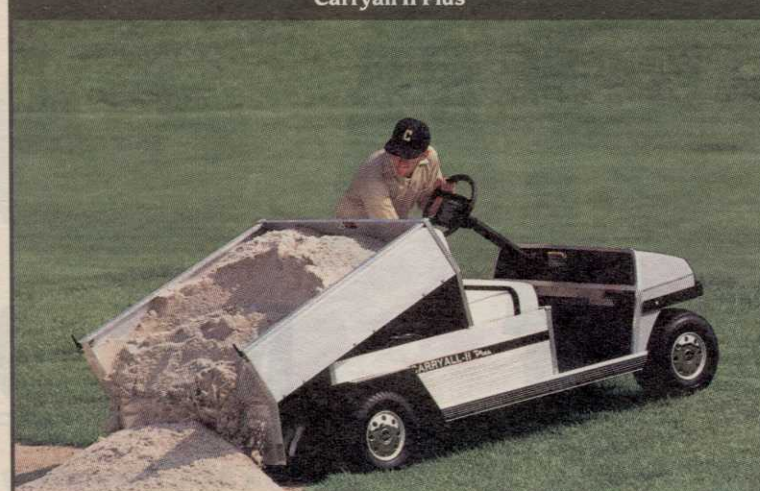
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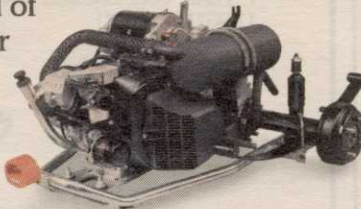
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\*As reported by the Center for Golf Course Management, a subsidiary of the Golf Course Superintendents Association of America.

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Proceeds from the \$50 per person event will be split between the Delaware Inland Bays Estuary Program and the Chesapeake Bay Studies Program at the Gunston School in Centreville, Md.



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Like everyone else, John Deere wanted to introduce a lightweight fairway mower years ago. We almost did.

In fact, by February 1991 we were pretty far along on our “me-too” machine.

Then, we had a setback. We asked superintendents what was important.

“Quality of cut,” they said.

“On what playing surface?,” we asked.

“Ours,” they replied.

“Wait!, you all work on different grasses, in different conditions.”

“Exactly.”

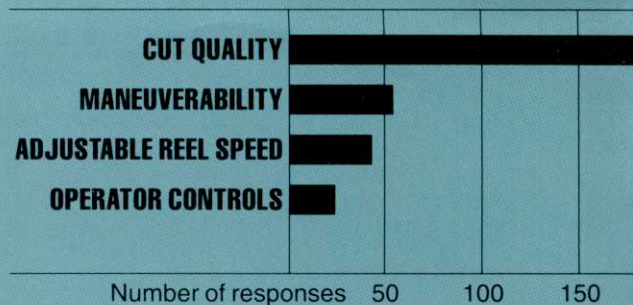
“But no machine delivers a quality cut on all playing surfaces!,” we pleaded.

“Now you understand the problem,” they said.

We went back to work. Geography told us to keep it simple. After all, there are basically only three turf zones



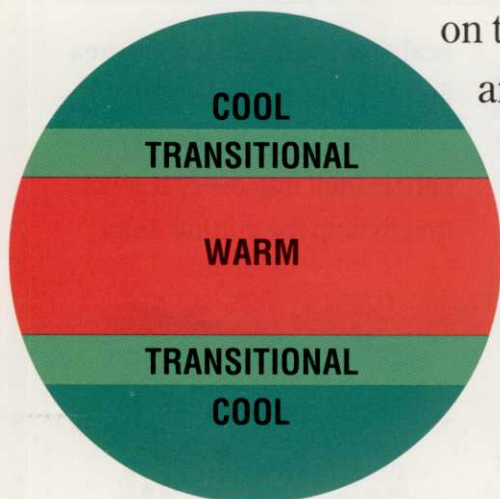
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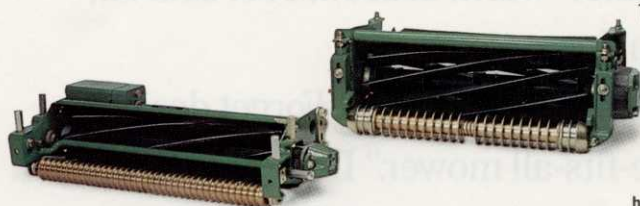
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# Two solid designs—one solid story

## Cutting unit advantages



Two cutting unit options allow you to match the right cutting unit to your turf. The standard 5-inch, 7-blade cutting unit is designed for delicate grasses—while the heavy-duty 7-inch, 8-blade

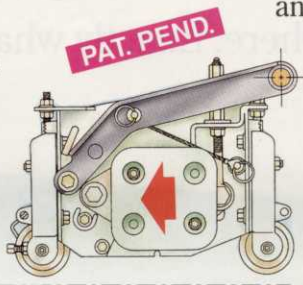
ESP unit is perfect for tougher conditions.

John Deere's investment in reel manufacturing paid immediate dividends on this project. Our ability to design and manufacture our own cutting units gave us the freedom to take a new direction.

which keeps the cutting unit level and in more solid contact with the ground.

Second, two ground-hugging 22-inch cutting unit options ensure a high-quality cut on any type of grass or terrain.

Moving the cutting-unit mounting point behind center puts balanced force over both rollers improving quality of cut by keeping the cutting units more level during operation.

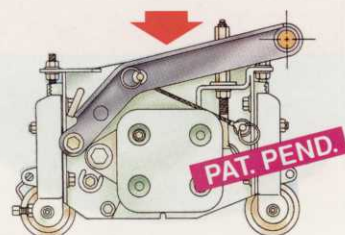


First, a patent-pending mounting design moves the attaching point to the rear of the cutting unit. This helps ensure that as the cutting unit rolls over the turf there's balanced force over the front and rear rollers,

The 22-inch width of both the standard and heavy-duty cutting units ensure that you get a superior quality of cut over contoured terrain—regardless of the grass type you work on.

scalping warm season grasses for overseeding.

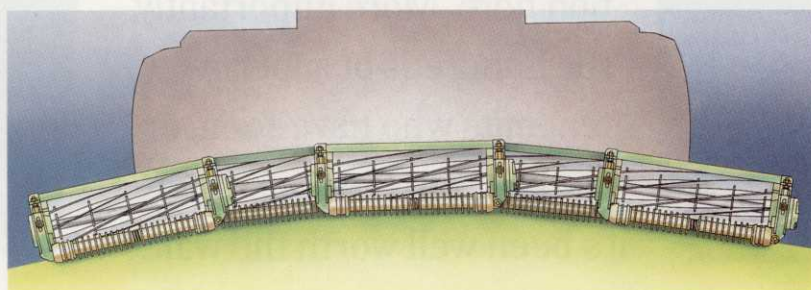
Finally, hydraulic down pressure is built into every traction unit to help the cutting units



Hydraulic down pressure helps keep the cutting units tight to the turf without weights or springs. A big advantage for mowing grasses in the warm and transitional zones.

better penetrate the turf.

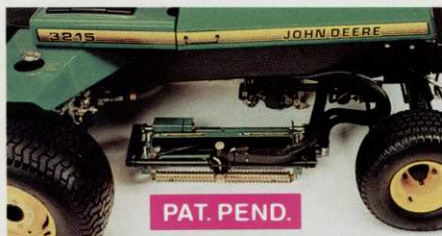
If needed, an optional patent-pending system allows you to put even more weight over the cutting units. All without the extra springs, weights, and other devices that get in the way of performance and service.





# A mechanic's and operator's dream

## Servicing and operating advantages



Patent-pending RFS (Rotate For Service) cutting units give unequalled service access. Cutting units rotate and present themselves for service—merely flip an unlocking spring and pull a pin.



Onboard backlapping is standard on both the 3215 and 3235. Simply pull out a knob to reverse oil flow and "dial-in" the desired reel speed. The same system allows you to set reel speeds for actual mowing conditions as well.



Simple service access is integrated into the design of every John Deere machine. The seat flips forward and the hood opens on the 3215 and 3235 so you can easily check or work on their engines and other drivetrain components.



Operator comfort and productivity features include two-pedal hydrostatic speed control, power steering, single-lever reel lift, deep-cushioned seat, and exceptional visibility.



Single-lever lift is integrated with PTO engagement to make operation easier. A single touch backward raises and shuts off the reels. A nudge forward lowers and re-engages them.





# You just can't beat

The days of "one-size-fits-all" lightweight fairway mowing just ended. Now, you can get the ground-hugging benefits of 22-inch cutting units regardless of what turf

surface you work on.

The 3215 Turf System I and 3235 Turf System II Mowers let you choose from two horsepower and two 22-inch cutting unit sizes. Combined, they

deliver three solid options to match your fairways.

The 3215 with standard cutting units is a 25.5-hp machine designed to perform well on any turf type, but especially on





# THE SYSTEM

the more delicate cool-season grasses. Cutting units are 5 inches in diameter and feature 7-bladed reels.

The 32-hp 3235 can be equipped with standard or

heavy-duty ESP cutting units. The ESP units are 7 inches in diameter, have 3-inch rollers, and feature 8-bladed reels.

Their wider mouth, extra weight, and higher-capacity

hydraulic motors allow them to work well where lightweights never have before—long grass, wet conditions, tough warm-season grasses, and scalping for overseeding operations.



# The only test left for

No one can accuse John Deere of rushing products to the marketplace. Thorough functional and field testing has always been part of a product's development.

Three years and 8,000 hours of field testing have both proven and improved the system. It's mowed on over 30 different golf courses in different areas of the turf world. It's worked in the cool-season, warm-season, and transitional zones—on bent, rye, bermuda, zoysia, and more.

In addition, the traction unit and components have been put through their own battery of stress tests to ensure they'll survive the tough conditions you work in.

In fact, there's nothing left for us to do now except to give you our promise. If for any reason you are not completely satisfied, simply return the unit to your distributor within 30 days or the first 100 hours (whichever comes first) for a full refund.

We've done our homework. Now, it's time for you to see and benefit from its results.



Electronic stress testing monitors and records how well various parts of the machine hold up to the shocks of normal use and abnormal abuse.



Field testing included over 8,000 hours of actual operation on golf courses and other fine-turf applications.



# us to pass is yours



Paul Ellwood  
Test Course Supt.  
Phoenix, Arizona

"I'm very impressed to see a heavy-duty cutting unit that can follow ground contours as well as perform well on both bermuda and rye."



George Cook  
Test Course Supt.  
Bradenton, Florida

"We put over 580 hours on the unit and had very few problems. It's nice to know John Deere is interested in our input."



Lyman Hanley  
Test Course Supt.  
Tempe, Arizona

"We scalped for over-seeding last fall. I was amazed at how this machine went in and cut everything in one pass."



Mike Lentz  
Project Manager  
Horicon, Wisconsin

"We made a number of modifications based on what we learned in the field. The testing and feedback were critical to this project's success."



Ken Bauer  
Test Supervisor  
Bradenton, Florida

"Our test program here was very successful because we put on a large number of hours in many kinds of conditions."



Bob FINDER  
Test Supervisor  
Phoenix, Arizona

"The quality of cut impressed people here, in addition to maneuverability, mowing speed, cutting unit power, and operator comfort."

## THE JOHN DEERE GOLF & TURF PROMISE

If for any reason you are not completely satisfied with your purchase, simply return it to your distributor within 30 days or the first 100 hours (whichever comes first) for a full refund.



## 3215 TURF SYSTEM I

## 3235 TURF SYSTEM II

## Engine

Type .....	Yanmar .....	Yanmar .....
Horsepower .....	25.5 hp (19 kW) .....	32 hp (24 kW) .....
Fuel .....	Diesel .....	Diesel .....
Cooling .....	Liquid .....	Liquid .....

## Vehicle

Traction type .....	Hydrostatic pump with wheel motors .....	Hydrostatic pump with wheel motors .....
Reel drive pump .....	Tandem-gear pump .....	Tandem-gear pump .....
Reel drive .....	Direct-coupled hydraulic gear motor .....	Direct-coupled hydraulic gear motor .....
Backlapping .....	Standard microlap valves .....	Standard microlap valves .....
Hydrostatic system capacity .....	12 gal. (45.5 L) .....	12 gal. (45.5 L) .....
Fuel tank capacity .....	10 gal. (28.4 L) .....	10 gal. (28.4 L) .....
Steering .....	Power steering .....	Power steering .....
Front drive tires .....	26.5 x 14-12 turf .....	26.5 x 14-12 turf .....
Steering tires .....	10 x 20-8 turf .....	10 x 20-8 turf .....
Ground pressure .....	11 psi .....	11 psi .....
Brakes .....	Dual disk/hydrostatic .....	Dual disk/hydrostatic .....
Actual operating weight (2WD) .....	2,500 lb. (1134 kg) .....	2,550 lb. (1157 kg) with standard cutting unit 2,750 lb. (1248 kg) with ESP cutting unit

## Controls

Throttle .....	Hand .....	Hand .....
Forward/reverse .....	2-pedal .....	2-pedal .....
Mower lift .....	Single hand lever .....	Single hand lever .....
Parking brake .....	Foot pedal with lock .....	Foot pedal with lock .....
Seat .....	Deluxe high back .....	Deluxe high back .....

## Dimensions (approximate)

Height .....	54.5 in. (1.38 m) .....	54.5 in. (1.38 m) .....
Length with catchers .....	110 in. (2.79 m) .....	110 in. (2.79 m) .....
Transport width .....	86.5 in. (2.2 m) .....	86.5 in. (2.2 m) .....
Mowing position width .....	110 in. (2.79 m) .....	110 in. (2.79 m) .....
Ground speed:		
Mowing .....	0-7 mph (0-11.2 km/h) .....	0-7 mph (0-11.2 km/h) .....
Forward .....	0-11 mph (0-17.7 km/h) .....	0-11 mph (0-17.7 km/h) .....
Reverse .....	0-5 mph (0-8.0 km/h) .....	0-5 mph (0-8.0 km/h) .....

## Cutting Units

Cutting unit width .....	22 in. (558 mm) .....	22 in. (558 mm) .....
Cutting unit diameter .....	5 in. (127 mm) .....	5 in. (127 mm) .....
Width of cut .....	100 in. (2.54 m) .....	100 in. (2.54 m) .....
Height-of-cut (HOC) range:		
7 Blade (standard) .....	¼-1½ in. (6.4-28.5 mm) .....	¼-1½ in. (6.4-28.5 mm) .....
8 Blade (ESP) .....	N/A .....	¾-3 in. (9.5-76.2 mm) .....
Frequency of cut (FOC):		
7 Blade (standard) .....	.060 in./mph (1.7 mm/km/h) .....	.060 in./mph (1.50 mm/km/h) .....
8 Blade (ESP) .....	N/A .....	.084 in./mph (2.14 mm/km/h) .....

## Rollers

5-inch cutting unit: Front .....	2.0 in. (5.1 mm) .....	2.0 in. (5.1 mm) .....
(stdard) .....	3.0 in. (7.6 mm) optional .....	3.0 in. (7.6 mm) optional .....
Rear .....	2.0 in. (5.1 mm) .....	2.0 in. (5.1 mm) .....
7-inch cutting unit: Front .....	N/A .....	3.0 in. (7.6 mm) .....
(ESP) .....	N/A .....	3.0 in. (7.6 mm) .....

## Height-of-cut adjustment

5-inch cutting unit (standard) .....	Wrench adjustable .....	Wrench adjustable .....
7-inch cutting unit (ESP) .....	N/A .....	Wrench adjustable, quick adjust in ⅛ in. (1.58 mm) increments

## Warranty

One year

## Certificate

ANSI B71.4-1990, without added ballast

(Specifications and design subject to change without notice.)



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## North Central

### ILLINOIS TURF SHOW SET

ST. CHARLES, Ill. — More than 40 turf specialists, 16 idea-filled workshops and 150 exhibits of new turf products and services will be featured when the Illinois Turfgrass Foundation holds the 10th anniversary North Central Turfgrass Exposition (NCTE), Nov. 29 to Dec. 1, at the Pheasant Run Resort here.

ITF President and NCTE Chairman James D. Ashby said a 'Back to Basics' program will be given as part of a comprehensive educational certification program being developed by the ITF. "The program is part of what ITF hopes will become a vehicle for accreditation in the area of turfgrass management," he said.

More information is available from Nancy Jones or Jack Jagershausen at the ITF, One Illinois Center, 111 E. Wacker Drive, Suite 200, Chicago, Ill. 60601-4298.

## Mountains

### ARBORIST FEATURED IN WYOMING

CASPER, Wyo. — Dr. Alex L. Shigo, an internationally renowned arborist, will be featured at two sessions at the Wyoming Groundskeepers and Growers Association's (WGGA) Annual Conference and Trade Show here, Jan. 26-28.

Shigo will speak from 9 a.m. to noon and 1:30 to 4 p.m. Jan. 27. The show, at the Casper Events Center, will also include talks on athletic field drainage, equipment repair and maintenance, irrigation, and the Americans with Disabilities Act.

More information is available from Tammy Young of the WGGA at 307-637-7060.

## Northeast

### GREENS CHAIRMEN TO LEARN

RYE, N.Y. — A seminar for superintendents and greens committee chairmen will be held as part of the Professional Turfgrass Field Day and Greens Chairman Educational Seminar at Westchester CC, Oct. 19.

The greens chairmen's seminar will be held from 9:30 to 11 a.m. on the subject of bunker reconstruction, presented by course architect Stephen Kay.

The event includes a turf and athletic field maintenance seminar and demonstrations of reel mower grinding and of maintaining an overscheduled athletic facility.

More information is available from Jeffrey Scott at The Apawamis Club at 914-967-2570.

## Southeast

### ALABAMA READIES WATER PLAN

MONTGOMERY, Ala. — The Alabama Department of Environmental Management is conducting a series of hearings on a plan to foster more efficient and comprehensive protection of the state's ground water. The plan spells out procedures the state would follow in implementing programs to prevent harm to humans and the environment and to protect ground-water resources.

After the hearings, a plan will be drafted and submitted to the EPA for final approval. Alabama is one of 10 states and two Indian communities selected by the EPA to participate in a pilot program for accelerated development of a Comprehensive State Ground Water Protection Program. The hearings will be held Oct. 7 at the ADEM conference room here; Oct. 14 at the International Trade Center in Mobile; Oct. 19 at the Alabama Power Co. in Anniston; Nov. 4 at Drake Community College in Huntsville; Nov. 9 at Dothan Civic Center; and Nov. 18 at Florence City Hall.

## West

### OREGON DEQ TARGETS OILY WASTE

PORTLAND, Ore. — The Oregon Department of Environmental Quality is proposing to renew a general permit used to regulate the discharge of oily wastewaters and to include the control of storm water.

The DEQ reported that some fueling operations and bulk petroleum storage facilities which have not

been covered by permit in the past will be permitted outright, with some limitations.

The permit covers storm-water runoff, ground-water dewatering discharges, draining of water from storage tanks, and other discharges associated with petroleum storage, formulation or packaging facilities. It can also include oily discharges from motor pools or other facilities which can generate an oil discharge.

A series of public hearings will be conducted from Oct. 11-19 at Pendleton, Bend, Portland, Medford and Salem. More information is available from the DEQ at 503-229-5696 or 800-452-4011.

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*Turfgrass Seed Availability Forecast For 1994*  
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*Traffic Control On The Golf Course*  
*The Past & Future Of Bentgrass*  
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# GOLF COURSE NEWS

EXCLUSIVE SURVEY

## Computerized Irrigation Manufacturers

	Rain Master Evolution	Solatrol LEIT-LINK	Thompson Mark 1	Hunter ETC Satellite & GIMS Central	Rain Bird Maxi System V	The Toro Company Network 8000
Is system PC dedicated?	No	No	Yes	No	Yes	No
Can system control non-irrigation equipment?	Yes	Yes	Yes	Yes	Yes	Yes
Is system Evapotranspiration Rate-based?	Yes	Yes	Yes	Yes	Yes	Yes
How many weather stations can it monitor?	4	None	1	1	8	1
Is information downloaded to satellite or stored in computer?	Both	Both	Downloaded	Satellite stored	In computer	Downloaded
When installing into existing irrigation system, can you simply install controllers and satellites without changing hardware?	Yes	No	Yes	Yes	Yes	Yes
Are computers and satellites reverse compatible when one or the others upgrade to a new version?	Yes	Yes	Yes	Yes	Yes	No
What computer system must be used?	IBM OS/2	Solatrol	Apple Mac II	IBM comp.	IBM comp.	IBM comp.
How many U.S. service centers available?	7	1	7	39	100	50
Do your satellites have internal uninterruptible power supply?	No	Yes	No	No	No	Yes
Does your system include a constant-voltage transformer at every satellite?	No	Light-energized	No	No	Yes	Yes
How many satellites can your system operate?	2,500	Unlimited	"4,000"	168+	224	800
What is your hardware guarantee (in years)?	3	5	1-3	1-2	1-3	1

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### Pumping Stations

## Constant vs. Variable: Which frequency drive suits you?

By PETER BLAIS

If any superintendent needs convincing he should "go with the flow" toward variable frequency drive (VFD) pumps, just ask Virgil Robinson.

Robinson is head superintendent at 54-hole Desert Mountain in Scottsdale, Ariz.

Desert Mountain's older Renegade and Cochise courses use constant-frequency pumps for irrigation exclusively. The Geronimo has a combination of VFD and constant-frequency units.

"Our electrical costs are 18 to 20 percent lower on the Geronimo course because of the VFD pump," Robinson said. "I would recommend VFDs to just about anyone."

VFDs afford economic advantages because they operate much more efficiently than constant frequency systems. Robinson offered the following example:

Say a golf course had three constant-frequency, 500-gallon-per-minute capacity pumps, but needed just 1,200 gallons of water per minute. To water the turf, a superintendent must run all three at full capacity, but limit the output of the third to just 200 gallons per minute by using control valves.

"Using those valves wastes electricity," Robinson said.

On the other hand, a superintendent with two constant-frequency, 500-gallon-per-minute pumps and a VFD unit could spread the exact amount of water he needed without wasting electricity. To do that, he would run the two constant pumps full capacity. The VFD's output could be adjusted to 200 gallons per minute by simply changing the frequency

of the pump drive. No control valves are needed to interrupt water flow and no electricity is wasted.

"VFDs fill in the gaps without wasting power," Robinson explained.

Although VFD pump technology has been available for more than 20 years, lower manufacturing costs and improved technology made them popular for golf course irrigation beginning about five years ago.

Consequently, Desert Mountain's older Renegade and Cochise layouts, both opened in 1987, have only constant-frequency pumps. Renegade has a 125-hp, two 75-hp and a 10-hp submersible jockey pump while Cochise labors along with constant-frequency 100-hp, 75-hp and 50-hp pumps and 10-hp jockey unit.

Geronimo opened two years later with a 125-hp VFD as well as two 75-hp constant-frequency pumps and a 10-hp jockey.

"I would never buy four VFDs because of the extra expense," Robinson said. "One VFD does the job and makes the difference."

Desert Mountain's three courses have Bermudagrass tees and fairways and bentgrass greens. Each layout needs as much as 800,000 gallons daily.

Robinson's crew performs routine maintenance (replacing oil and gaskets) on the pumps. But with the increasing use of computerized pump systems, Robinson has entered into a maintenance contract with a local firm that inspects his system every three to four months.

"In this climate, if we lose our irrigation system, we have 24 hours before we begin losing turf. We can't afford to be without those pumps," he said.



## Commentary

## Progress in irrigation technology means choice

By SCOTT MORGAN

Irrigation is defined as the practice of supplying arable land with water. A simple concept, yet the practice of irrigation has become increasingly complex. As most people familiar with the golf course industry know, the superintendent is facing a more complex set of requirements. Effluent water usage, government-driven regulations and multiple customer requirements and expectations complicate and conflict.

Every time a new regulation or expectation emerges, it increases the complexity of the superintendent's job. Hence, the equipment related to irrigation has also become increasingly complex.

My wife, a software engineer for a major aerospace company, related a story to me. Whenever the work environment at her office gets a little testy, the engineers start musing about careers in less technically demanding industries. Of course, irrigation is thought of as one of those less demanding industries. The logic seems to run like this: "How hard can it be to build an irrigation controller? 4:00 a.m. Water on. 4:05 a.m. Water off."

Of course, the logic offered up by my wife's associates does not hold true. Some radical changes have occurred in the irrigation industry over the last 10 or 15 years. Each one of those changes has added to the complexity of irrigation. An analysis of those changes will lead us to some idea of what direction the technology in the industry may be heading.

One of the long-running debates has centered upon the method of driving a sprinkler's rotation. Does one use the impact method or does one use the gear-driven method? At one time, the major industry competitors were oriented against one another in this debate. The usual sales pitches touted the impact drives as having a simpler design. This meant that water passed through the sprinkler in a straighter course, allowing for more energy efficiency and higher resistance to debris.

Now that gear-drives have taken over, one can assume that the straight-through design of the impact drive was not an advantage. Instead, it succumbed to a technology that was more complex and more flexible. Gear-drives were improved to be more pressure-efficient than impacts and equaled or exceeded impacts in durability and debris resistance.

Today, an important on gear-drive technology is not clearly evident. Some of the major manufacturers are just developing gear-drive sprinklers and will not be ready to innovate beyond that technology soon. In fact, it is more likely that the next major change involving a sprinkler

will be associated with its actuation rather than its ability to distribute water.

Returning to the concept of "4:00 a.m., water on," it is important to note the basic factors that a sophisticated, computer-controlled irrigation system must recognize and manage. These factors include evapotranspiration rate, rainfall, plant materials, soil types, soil compaction, terrain



Scott Morgan

slope, geographic location, pH factor and system design. Combine these requirements with flow management, environmental sensing and field satellite input and it is easy to see the complexity.

Fortunately, software is very flexible. One can create and modify according to changing requirements without investing in tooling or production facilities. The trade-off is the in-

creasing reliance on the micro computer. As we are already seeing in the personal computing industry, the new micro computers will have standard eight to 16 megabytes of RAM and hard-drives in the 400 megabyte range. The computer itself adds to the complexity.

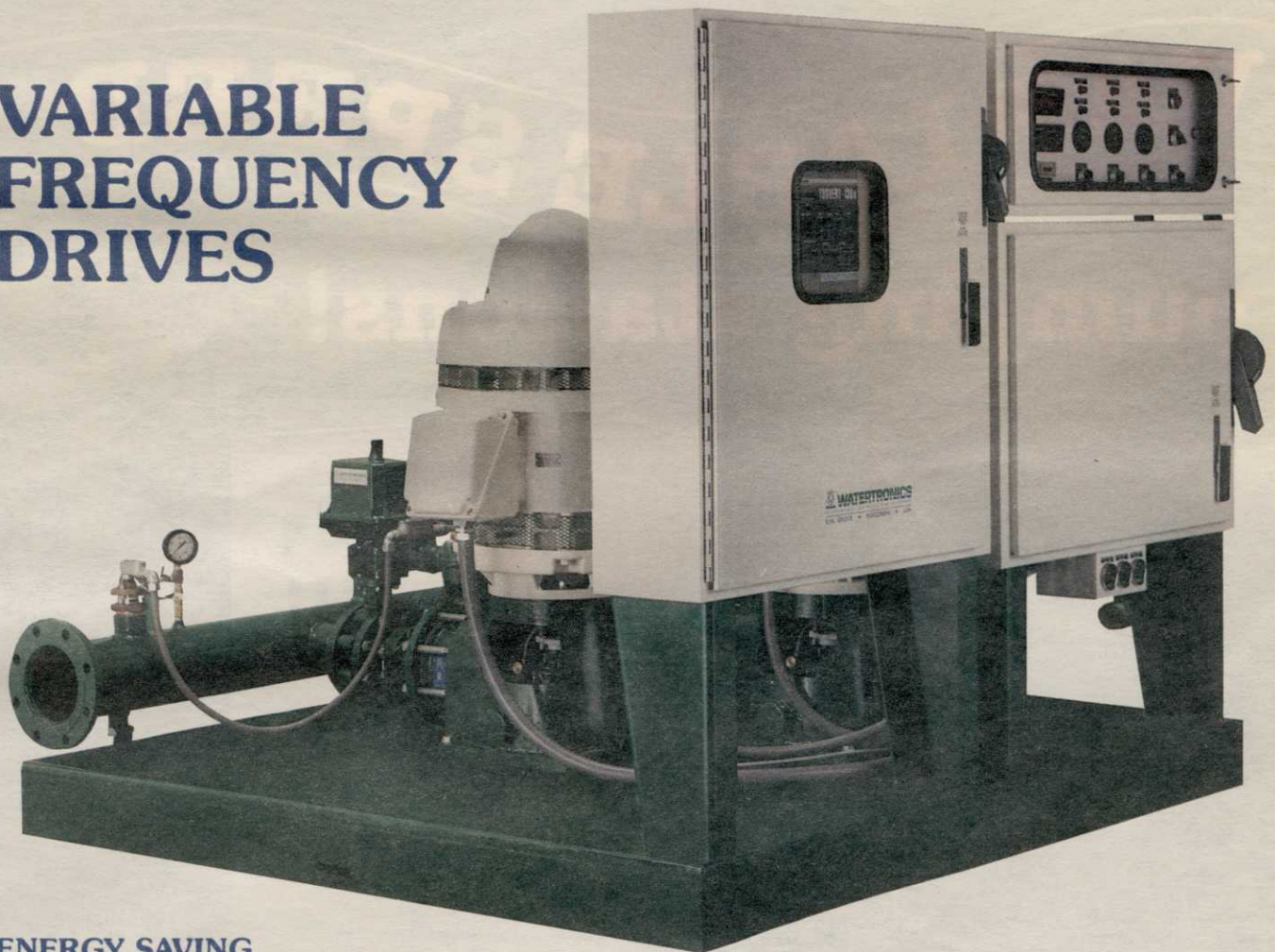
No matter how good the software and hardware is, computer systems require a tremendous amount of support. In the future, computer-controlled central software will be even easier to use. However, system support will be even more crucial. Manufacturers will have to invest more time

and resources in supporting systems. They will need to develop dedicated organizations specially focused on computer-controlled system support. These organizations will have the tools to look into the superintendent's computer to diagnose and solve problems.

In fact, these dedicated organizations may even source the computers for the golf course, be capable of fast component replacement service and offer cradle-to-grave warranties and upgrades. All of this is an effort to make the job of managing golf course irrigation less complex.

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Scott Morgan is marketing manager for golf irrigation for The Toro Company Irrigation Division, based in Riverside, Calif.



## Winds of change at GCSAA

Continued from page 11

need help at our level. GCSAA is supposedly for us, the superintendents. If we're going to expand, I'd rather see us offering more programs for our assistant superintendents and mechanics. They are very important in running our courses."

Fahey was one of 113 chapter presidents and voting delegates invited to attend a special meeting at GCSAA headquarters in Lawrence, Kan., Sept. 25-26.

"We're supposed to talk about the bylaws. But I'm sure we'll dis-

cuss Schilling, too," Fahey said.

Schilling said the board has discussed, in general, the type of individual it wants to replace him.

"But the search probably won't get serious until mid-October," said the outgoing chief executive officer, who has agreed to stay on until January. "The board has asked me to help explain what the job entails to people they interview. Obviously, I won't be involved in the selection process."

Nichols said last month that GCSAA could eventually do busi-

ness with Schilling's new management firm, St. Andrews Corp.

"No specific agreements have been reached," Schilling said. "We're looking at the association's needs and what St. Andrews can do. If there is a fit there, then maybe we can do something. Right now, there is nothing in the wind."

St. Andrews has looked at purchasing several sites for its offices, including GCSAA's old headquarters building in Lawrence.

"We're looking at it," Schilling confirmed. "But we'd have to consider its rental potential. It's too big for just us."

Since he is still a full-time GCSAA

employee, Schilling said his duties at St. Andrews are limited to what he can do outside regular 9 a.m. to 5 p.m. business hours. Ochs and Green, his partners at St. Andrews, are performing the day-to-day functions of setting up the business.

Top management's sudden departure and Andersen's methods in conducting the management study have been questioned privately. Whisperings of lawsuits have surrounded the administrative shake-up, although no one will say who might sue whom or over what.

With the \$700,000 settlement in former Executive Director James McLoughlin's case still fresh in their

minds, some members were alarmed at the recent housecleaning.

"I'd be surprised if we saw any lawsuits," Faubel said. "But with the experiences we've had, the board should have learned to move very cautiously."

Kevin Downing, head superintendent at Willoughby Golf Club in Stuart, Fla., has made a formal recommendation to the board of directors to establish an advisory board. It would consist of others in the golf industry who would advise directors on how legal, business and government issues could affect their decisions.

"We have some great people on the board," Downing said. "But they have golf courses to run and can't be expected to know everything."

"I've made the recommendation, but haven't heard yet. I don't know what they'll do with it. But I do know we can't have an association that is being hauled into court every four to five years."

## Barrier island

Continued from page 11

the soil, and installation of the large number of drains has reduced standing water throughout the course.

Padre Isles CC recovered fairly well from the two hurricanes, said Suding. Its fairways and greens are built up higher than the surrounding terrain in most areas.

The hurricanes deposited salt water in the course lakes which had to be pumped out and fresh water pumped back in.

Designed by Bruce Littell, the course blends with surrounding barrier island environment, with sea oats and other natural vegetation, small lakes and white, powdery sand dunes. However, coarser sand is imported for the bunkers and top dressing.

The links-style course, unique in south Texas, has over 24-inch-high heather rough and large greens considered the best in the area.

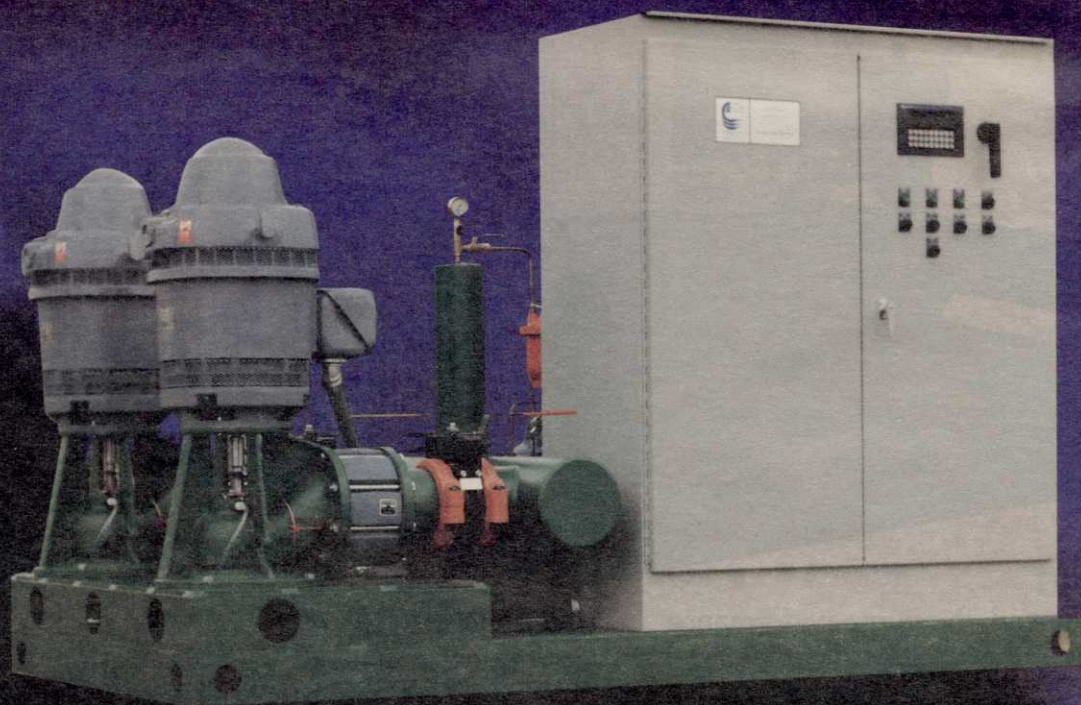
The 18-hole, 7,000-yard course was built 22 years ago in development of the adjacent Padre Isles boating community. With a new investor taking over three years ago, the course benefited from a six-figure facelift, greatly increasing its USGA rating.

Improvements include a new drainage system, 30 sand bunkers, a chipping green, driving range, carts and maintenance equipment, 500 palm and other various trees, and many new lakes.

"We have provided a lot of wetlands," said Suding. Many varieties of waterfowl live in the area, joined by exotic birds on winter migration. Animals that appear at the course range from jack rabbits to coyotes.

"We feel as if it were a wildlife sanctuary," said Suding. In respect to the more fearsome aspect of nature on the barrier island, the course has its own hurricane preparedness plan. It involves bringing in pumps and generators, storing fuel, equipment and supplies, and boarding up windows.

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# Keeping crew happy keeps crew, period.

By TERRY BUCHEN

Talking with supers, I take the opportunity to inquire about unusual fringe benefits that courses give their maintenance staff, other than vacations, sick days, holidays, etc., to improve employee morale. A little thoughtfulness goes a long way.

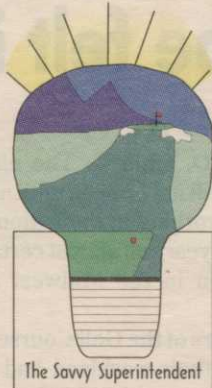
Some examples include:

- Employee golf tournaments, with an awards party afterward. Two-person teams are popular, with a scramble or alternate shot format. Taking the winning team's picture, blowing it up, framing it, and placing it for permanent display on the crew's lunchroom walls is a real morale booster.

- Employee fishing tournaments, where each employee catches as many fish as possible in a two-hour timeframe, with an awards party afterward. The winner's picture on the lunchroom wall also works well.

- Give each employee two movie ticket certificates for use on any day of their choice.

- Have an employee luncheon, in the clubhouse, in addition to the usual employee



Christmas party.

- Give out gift certificates to a favorite local restaurant chain for the employee and spouse, and maybe enough for the kids.

- Put on a soda machine party, where all profits from the lunchroom vending machine go back to the employees in a regular scheduled event, perhaps monthly.

- Club sponsorship of softball, bowling, volleyball and touch football teams is quite popular, with the course supplying the uniforms and paying part or all of the team entry fees.

- Annual family picnics, usually held off course property, are in vogue.

- Performance bonuses are starting to pop up at a few clubs to reward employees after the season is over, after a member/guest tournament, etc.

- Give employees their birthday off with pay.

Most of the supers surveyed said they noticed quite an attitude adjustment and it really paid off in improved productivity and employee overall happiness.

## Four supers enter Maine Golf Hall of Fame

POLAND SPRING, Maine — Four superintendents were among 17 people inducted into the newly formed Maine Golf Hall of Fame, during ceremonies held at the country's oldest resort golf course, Poland Spring Country Club.

Charles "Pop" Erswell of Brunswick, Shirley Liscomb of Bar Harbor, Frank A. Gilman of Augusta and James C. Jones of Cape Elizabeth, all deceased, were honored. Alex T. Chisholm of Biddeford, known as a course designer, club maker, player and teacher, was among the others inducted.

Regarded as the Father of Maine Golf, Erswell was especially famous for his inventions, including the first-known golf cart in about 1917. He was instrumental in forming the Maine Golf Association that in

1917 became the Maine Seniors' Golf Association, which he served as president.

A stone marker at the 3rd tee at historic Kebo Valley Club in Bar Harbor commemorates Liscomb's service as pro-course superintendent. He totaled 50 years at Kebo, the birthplace of Maine golf in 1891.

Gilman did everything in golf at Augusta (Maine) Country Club for about 30 years. A greenkeeper and instructor, he won four Maine Open titles.

Breaking into golf as a caddie in 1917, Jones gave lessons at Augusta CC while a junior in high school. He was head pro at Bath Country Club for 16 years and was the first president of the Maine GCSA. He was active as a course designer and superintendent consultant almost until his death in 1991.

### DELA. DECIDING OUTDOOR PLAN

Four more workshops have been scheduled for public input into Delaware's Statewide Comprehensive Outdoor Recreation Plan (SCORP). The state's Division of Parks and Recreation, which updates SCORP every five years, began the latest string of meetings in February. Municipal, county and state agencies responsible for outdoor recreation use the plan to identify future facility needs and to guide investment of both federal and state funds to fulfill these needs. The Delaware Trust Fund, established in 1986, stands at \$3.7 million. Trust-generated interest is the source of revenue for a matching grants program available to municipal and county governments.

The upcoming meetings will be:

- Tuesday, Oct. 26, at 7 p.m. in the Milford Recreation Building.

- Thursday, Oct. 28, at 7 p.m. in the Millsboro Civic Center.

- Thursday, Nov. 4, at 7 p.m. in the Carpenter's Union Hall in New Castle.

- Tuesday, Nov. 9, at 7 p.m. in Caesar Rodney High School.

More information is available from Mark Ivy at 302-739-5285.

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CIRCLE #123



## BRIEFS



## HEPNER JOINS DOAK

Golf course architect Bruce Hepner has left the firm of Forse Design to join Tom Doak and Renaissance Golf Design, Inc. of Traverse City, Mich. Hepner will collaborate with Doak on 18-hole projects as well as work on his



Bruce Hepner

own restoration projects. Hepner, who is working out of a West Leisenring, Pa., office until moving to Traverse City at the turn of the year, is restoring two Donald Ross

tracks in Michigan — Rackham GC in Royal Oak and Franklin Hills CC in Franklin. Hepner designed automobiles in Detroit for eight years before returning to college and earning a civil engineering degree in 1990 from Michigan Technical University. He joined Ron Forse in Uniontown, Pa., that year.

## BUSINESS, LEISURE SHOW SET

LAS VEGAS — Jim Colbert, Hale Irwin and others in the golf development industry will take part in the North American Golf Business & Leisure Industry Show, Oct. 19-21 at the Desert Inn and Bally's Resorts here. Impact from emerging market segments such as the baby boomers



and busters, families, singles, dual-income professionals and women will be explored by industry leaders. Keynote speaker Colbert will share insights into both the game and business of golf, and Irwin will make a special appearance.

## GAINFIELD FARMS UNDER WAY

SHELTON, Conn. — Construction has begun on a new nine-hole course here. The daily-fee course will be known as Gainfield Farms. Opening is scheduled for the summer of 1994. The layout was designed by Al Zikorus and course contractor is Eastern Land Management, Inc., of Shelton.

## ASGCA RELEASES PAMPHLET

The American Society of Golf Course Architects has published its 1993-94 membership list featuring all the names, addresses and telephone numbers of the 117 members. The pamphlet also includes a state by state listing of members. To receive a free copy of the 1993-94 ASGCA Membership List, send a stamped, self-addressed business envelope to: The American Society of Golf Course Architects, 221 N. LaSalle St., Chicago 60601.



## Long-awaited Naples National opens, hosts major tourney

No sooner will Naples (Fla.) National Golf Club open Saturday, Oct. 9, than it will host the LPGA's World Championship of Women's Golf, Oct. 10-17. This Mike Hurdzan-designed track, with no residential development surrounding it, contains elements of Pinehurst #2 and Pine Valley, "but with a Florida flair." Fuzzy Zoeller is featured at the grand opening Oct. 9 during the inaugural round and a golf exhibition at the practice facility.

## Effects of '93 flood to be felt in 1994

By HAL PHILLIPS

TOLEDO, Ohio — The effects of this year's Midwestern flooding will not be seen until next year, according to golf course builders working in the nation's heartland. But projects due to open next year will almost certainly be delayed by the damaging wet season in the Midwest and the severe drought in the Southeast.

Members of the Golf Course Builders Association of America indicated their workload had not suffered, despite the heavy rains of May, June and July.

"Usually it's so dry this time of year, you have to worry about clumps of dirt — but not this year," said Bill Kubly, president of Nebraska-based Landscapes Unlimited. "I think in terms of course openings, you're still seeing the results of last year's efforts."

"There's definitely been a [construction] slowdown because of all the rain this year. But you won't see the effects of that until next year."

Illinois-based Wadsworth Construction has been forced to go slow on projects in Minneapolis and Wisconsin, while another in St. Louis was abandoned altogether.

"We haven't had any projects in the direct area of flooding," said Brent Wadsworth of Illinois-based Wadsworth Construction. "But there's been so much rain all spring and summer, we haven't been able to get a whole lot done. I mean, a huge area of the country has been affected: From Illinois and Tennessee west to Colorado, New Mexico and Wyoming."

A Landscapes Unlimited project in Sioux Falls, S.D. — a Dick Nugent design called Prairie Green — has been delayed by Mother Nature. Another in Des Moines — a Tom Fazio project called Glen Oaks — is situated on high ground, but the flood conditions caused much more discomfort.

"My crew in Des Moines were without running water for two weeks," Kubly said. "People were telling them when to bathe and when not to. I went up to check on them and morale was still pretty high, but those aren't exactly ideal conditions."

## Americanization of Asian course design continues

YAMANASHI PREFECTURE, Japan — Despite the golf course development lull in Japan, von Hagge Design Associates are moving forward on two projects.

Von Hagge's Mike Smelek reports that, after three years of "political gymnastics," his firm has received approval to begin work on Minobu Golf Club here, in the shadow of Mt. Fuji. Local and national authorities requested a slew of modified routing plans before approving the project.

However, Minobu GC will be worth the wait, says Smelek. The rugged piece of property lies in the foothills just south of the Fuji River valley. To help negotiate the

severe topography, von Hagge will employ an extensive network of retaining walls between two and 15 meters in height. Smelek estimates that two million cubic meters of earth will be moved during construction.

Two more von Hagge Japanese projects are scheduled for completion this year: Maoi Resort in Hokkaido and Arima Royal near Kobe.

Meanwhile, the von Hagge Design team expects to break ground on Ajisu Country Club in early 1994. This 54-hole complex is owned by Ube Industries.

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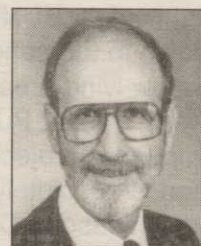
CHUNG SAN, China — Not unlike many of his fellow designers, Jack Nicklaus has been busy on the Chinese Mainland. His first 18 holes — The Chung Shan Hot Springs Resort — will open here this fall.

Meanwhile, in Shenzhen, another 18 should open for play next year at the Mission Hills resort. Another 18 holes are planned for this southern Chinese project.

Construction has begun on another Nicklaus project in Shanghai, where a 1995 opening is expected.

Other Nicklaus projects scheduled to open this year include Chang An Golf &

Continued on page 25

Bill Amick:  
Champion of  
modified golf

Bill Amick

Bill Amick may be from Scipio, Ind., and maintain a house in Florida, but he could call Europe his home nowadays. The 61-year-old Amick, who has spent most of the last 40 years designing golf courses, has spent much of the last several years flying from Florida to Europe and back. He is popular in Belgium, Italy and Portugal. President of the American Society of Golf Course Architects in 1977, Amick was also the founding president of the American Modified Golf Association.

**Golf Course News:** Are you personally building more regulation- or Cayman-length courses?

**Bill Amick:** Far more full-length courses.

**GCN:** How has the Cayman idea been received?

**BA:** In general, it's positive. But it needs something that will promote it in the United States — like they have in Japan, where they've built several courses exclusively for the Cayman ball.

**GCN:** Why do you so strongly support

this idea?

**BA:** There is a market for it, for a place for people learning the game at much less cost, quicker and easier because the Cayman ball is easier to get airborne and easier to learn with. Since it gets airborne easier, you don't have to hit it as hard to get satisfactory results. Then golfers can move on to a heavier, harder golf ball.

**GCN:** So you play it the way you would regulation golf except with shorter holes? About two-thirds the length?

**BA:** Exactly. About 60 percent.

**GCN:** Have they perfected the design of the BALL to the point where wind won't cause so much of a problem?

**BA:** The ball has been improved a great deal since [Jack] Nicklaus and Britannia started it back in 1985. But all of us involved believe it could be improved even more. MacGregor sold its patent rights and all

Continued on page 24

GOLF COURSE NEWS



## El Segundo selects Golf Planning Services to manage construction of muni track

EL SEGUNDO, Calif. — Golf Planning Solutions, a golf course construction management and consulting firm, has been awarded a contract for construction management services by the city to build its golf facility, The Lakes at El Segundo.

The "Lakes" will consist of an upscale, nine-hole golf course, a 60-station, two-level driving range, and a clubhouse with food and beverage services. It was designed by Halsey Daray Golf of La Mesa, and will be located on Sepulveda Boulevard just south of El Segundo Boulevard.

Groundbreaking was in June, with the grand opening planned for next spring. Golf Planning Solutions is owned by Lowell M. English, vice president of the Southern California Golf Association, and Thomas C. Bauer, a committeeman on the Southern California Golf Association rules and competition committee.

## Nugent creations Heritage Bluffs, Koolau GC open

CHANNAHON, Ill. — Heritage Bluffs Public Golf Club, the Channahon Park District's newest facility, designed by Dick Nugent, opened for public play Aug. 3. Meanwhile, the new Nugent-designed Koolau Golf Course in Kaneohe, Hawaii, has been given a USGA Slope Rating of 152 from the back tees, second only to Pine Valley for the highest rating in the United States.

Ron Read, director of the USGA's Western Region, said: "When a youngster thinks he is good enough for the PGA Tour, he should play Koolau four times. If he scores 288, I will beg and borrow all the money I can get to put him on the Tour."

Set in the crater of an ancient volcano at the base of the Koolau mountain range that splits the island of Oahu, the course faces a 2,000-foot vertical wall on one side and offers a breathtaking view of Kaneohe Bay on the other. Natural vegetation and pocket plantings of tropical varieties enhance its beauty.

"All other courses pale by comparison because the site is so dramatic," said Nugent, whose construction management division also supervised building of the course. "It's the pinnacle of any architect's career to get a site like this. There is almost a spiritual aura to it."

The course is located on 280 acres less than 10 miles north of Honolulu and below the famed Pali Lookout. It took 2 1/2 years to carve out this track. Environmental requirements were stringent. Virtually all the wetlands on the property, as well as four archaeological sites, had to be preserved.

...

Located on 166 rolling, wooded acres just north of the Des Plaines River, Heritage Bluffs features four tee boxes at each hole, with the par-72 course playing at lengths ranging from 4,967 to 7,106 yards.

A two-row computerized irrigation system was installed to ensure great conditions on the bentgrass fairways, and the putting on greens built to full United States Golf Association specifications.

## Bonita Bay unveiling set for mid-November

BONITA BAY, Fla. — A bird's-eye view of Bonita Bay shows nine new fairways and greens taking shape as the community adds a third 18-hole championship golf course by splitting one of its existing courses and adding nine new holes to each half.

The front nine of the Marsh course, opened in 1985 and ranked ninth in the state and 85th in the nation by *Golf Digest*, has been closed since mid-May. The greens are being rebuilt to United States Golf Association specifications.

By mid-November, the new Marsh will open, along with nine holes of Bay Island, Bonita Bay's newest course. Bay Island's remaining nine holes are scheduled for completion in late 1994.

"With initial site work completed, we already can see that the views are even more incredible than we had imagined," said Ed Rodgers, vice president of club operations for Bonita Bay Properties, Inc.

All three courses were designed by Ohio-based course architect Arthur Hills. Many fairways border wetlands sloughs and other natural areas which comprise one-quarter of the Bonita Bay site. While three of Creekside's holes border Spring Creek, part of Bay Island will run along the western edge of Bonita Bay and offer dramatic views of Estero Bay.

Wadsworth Golf Construction Co. built the Marsh and Creekside, the second Bonita Bay course, and will build Bay Island as well.

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## Q&A: Amick

Continued from page 22

rights to the Cayman Golf Co., which is Troy Puckett.

**GCN:** What ignited your interest in this in the first place?

**BA:** Bill Diddel, who I was working for in 1955 in Indianapolis, had come up with this idea in the early 1930s. He got a patent on a **Ball** in the early 1940s. He was a proponent of the concept that there could be a place for a game similar to golf and introducing golf, but with a ball less lively on courses that were much smaller, more economical, with faster play.

**GCN:** Is it the aura of golf as we've known it traditionally and historically, that has slowed the idea?

**BA:** Cayman golf is competing with 500 years of accepted, established golf. And it will never replace it. None of us involved believe that. It is more like softball to baseball, or badminton to tennis. That's where it fits — as less serious, less expensive, more of a family game than golf.

**GCN:** You've been a golf course architect for about 40 years.

**BA:** I started working for Bill Diddel in 1955. I established my own firm in '59. With the exception of being in the Air Force two years, this is what I wanted to do.

**GCN:** Most of your work used to be in the United States until the last seven or eight years. What drew you to Europe?

**BA:** I had some inquiries and answered them and visited the sites. A few inquiries led to other jobs, which continue today.

**GCN:** How does building a golf course in Europe compare to building in the United States — from permitting to construction?

**BA:** You're going through the same process, but the permitting is a different system. In the United States, it can be different to a certain extent from state to state. We have federal and state and county and regional agencies. In Europe, the permitting process is more interested in the look. In the United States, it tends to be more centered on wetlands, water, runoff. In Europe, it's preserving the vegetation, mature trees, and, in some countries such as Italy, it's not so much a matter of content, or policy or regulation.

Germany has the most rigid requirements. For instance, you are not supposed to cover fill over one meter in height. And they have very specific requirements. Even on open farmland they require planting of vegetation. They go by the book, not by need.

**GCN:** In your years in design have you noticed an evolution in golf course design in America?

**BA:** I don't know if you'd call it evolution. There have certainly been changes. When I worked for Bill Diddel and got on my own, there were hardly any regulations, which was the other extreme. We needed some.

**GCN:** You're saying courses built 40 years ago would never have been built today.

**BA:** In Florida, particularly, because that's where I've done more of my work. Swamps were drained for housing and golf courses that absolutely could not be touched today.

**GCN:** Were the architects who designed those courses partly at fault?

**BA:** I was one of them.

**GCN:** Would you do it again?

**BA:** No. First, we can't do it again. And we wouldn't do it again. Basically, the regulations have logic. What frustrates all of us — developers and architects included — is the paperwork, the hearings, the sometimes irrational public

emotionalism. Also, the fact that some of it is bureaucracy that has no direct value. It's the system. But the system has been established and we must deal with it.

**GCN:** You've dealt with the activists in America. Do you think that with the testing being done on effects of pesticides and runoff, will the activists accept it if the facts come down on the side that golf courses do not pollute?

**BA:** What's being done as far as studying is valuable to us all. The regulators are certainly ahead — and often much ahead — of the public. In the state of Vermont there has been a lot of emotionalism and

a lot of pure-and-simple anti-growth. And any basis — real or imagined — is sometimes used against individual projects. That will probably always be.

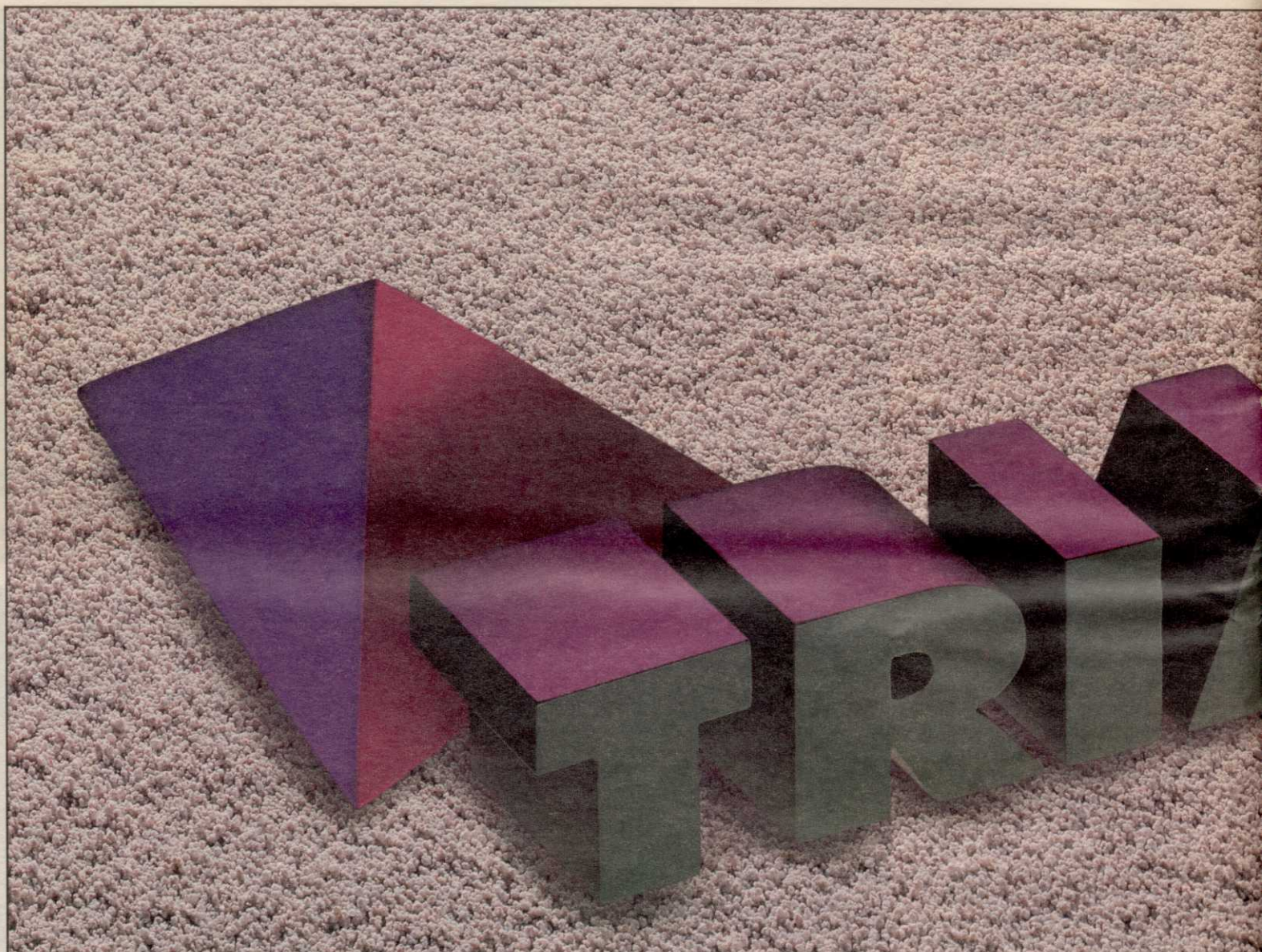
**GCN:** You are saying government officials are ahead of the public. But they are the ones who did the Cape Cod Study, which had positive results in the golf industry's eyes.

**BA:** What's frustrating the golf course architects is not so much dealing with the staff of the Corps of Engineers or the state. We can deal with it as long as we know what the regulations are and what we need to do to satisfy them. What frustrates us is when we get into public

hearings and they go on and on and on. It becomes an emotional issue, and the people have an influence on the elected or appointed officials. And decisions are made not on staff recommendations, and not based on fact.

**GCN:** What has been your greatest joy designing golf courses?

**BA:** The reason I got into it, and what continues to please me most, is the process of fitting the best golf course possible onto the available piece of land — like a puzzle. That, I love to do. Solving the problems posed by each site and each situation. The uniqueness turns me on.



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## Brauer signs on for Great Southwest GC remake

GRAND PRAIRIE, Texas — GolfScapes, Inc. of Arlington has been commissioned for a complete redesign of the Great Southwest Golf Club here. Renovations will include completely redesigned greens, as well as new fairway bunkers, according to GolfScapes President Jeffrey Brauer.

Rausch Golf of Denton has been retained to do the construction work. The club's owner is Great American Clubs of Dallas.

Great Southwest, originally designed by Ralph Plummer in association with Byron Nelson, is considered one of the best natural layouts in the Dallas/Fort Worth area.

Over the years, the original small greens have become inadequate for the demands of today's

golfers. The greens will be enlarged, rebunkered, recontoured and seeded with new neat-tolerant varieties of bentgrass.

Brauer said he wants to retain as much of the original traditional character of the golf course as possible.

"However, we must take into account the faster green surfaces of today, as well as circulation, speed of play and fairness for all classes of golfer who now play at the club," he said.

"The final look, while traditional, will be completely revised. Given the natural site, we believe the course will attain a new reputation for greatness in the Metroplex."

Construction is scheduled to conclude this fall.

## Burns uses streams, ravines, hills to give Hawk's Nest track character

WOOSTER, Ohio — Two hundred acres of rolling terrain, streams and ravines provide the easel for architect Stephen Burns' new Hawk's Nest Golf Club here.

A upscale daily-fee course owned by Earl and Betty Hawkins, Hawk's Nest opened its first nine on July 13. Seeding for the second nine was done this summer.

Lakes or streams influence play on nine holes, although there are few forced carries. Tended by superintendent Tim Smith, formerly of Acacia Country Club, the track measures from 4,650 to 6,600 yards.

Central Florida Turf of Avon Park, Fla., built the course with the Fernandina Beach, Fla.-based Burns Golf Design. The two firms have broken ground on The Club at Ravenswood Lake, a development course in nearby Medina.



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CIRCLE #125

## Americans in Asia

Continued from page 22

Country Club in Taipei; the Manila Southwoods Masters Course in the Philippines; Sendai Minami Golf Club in Miyagi Prefecture, Japan; the East Course at Springfield Royal Country Club in Cha-am, Thailand; Sun Valley Golf Club in Nokor Rajasima Province, Thailand; and Bangkok's Winsan Golf Club.

Nicklaus Design has opened its new office in Hong Kong, where the U.S.-based golf architecture, agronomy and management firm will coordinate business developments in China and other Asia-Pacific countries. Michael Grant, vice president of Golden Bear International, will relocate to the Hong Kong office and head the company's Asia-Pacific operations.

...

ZHAO QING, China — True to its globe-trotting form, Gary Player Design Co. has delved into the Chinese market without hesitation.

The 54-hole Zhao Qing Golf Club is scheduled for completion here in mid-1994. Gary Player visited the site (75 miles west of Guangzhou) earlier this summer. It was the Black Knight's first-ever visit to the world's most populous nation.

Player toured the grounds with one of his firm's top designer, Tom Ross, who is handling the on-site, architectural direction.

During the same trip, Player stopped in Shenzhen — just a few miles from the Hong Kong border — to host the marketing launch of the Sand River Golf Club.

Developer Serge Pun and several of the founding members were in attendance.

The 27-hole Gary Player design will include nine holes of links land golf, nine holes winding around lakes, and nine equipped with night lighting. Sand River will also feature a Gary Player Golf Academy.

Meanwhile, construction of the 18-hole Orchard Golf and Country Club in Manila is nearing completion.

Final shaping has been wrapped up on 13 holes and the irrigation system has been installed on nine more. According to Player's Design Coordinator, Danie Obermeyer, nine holes were played before the onset of rainy season in July.



Continued from page 1

83 acres of office buildings, apartments and hotels.

Twelve acres are being fashioned into the nine-hole course, while the other 18-acre parcel will be a double-ended practice facility open for winter play. Both the course and practice area will be lighted and open until 11 p.m.

"The driving range is the primary revenue generator," said Tourtellotte. "We have 112 stalls and it takes that many to make this profitable enough to be able to build the par-3 course, which is the sizzle of the project."

"And 70 percent of range income

## Chicago complex stars Dye Family 3s

is generated after 5 o'clock. It was the lifeline of the project to be able to stay open as late as we could."

Dye and Tourtellotte chose to duplicate, in order, the 17th hole at Harbor Town; 16th at LaQuinta's Mountain Course; 3rd at Crooked Stick in Carmel, Ind.; 12th at Riverdale Dunes in Brighton, Colo.; 5th at the Ocean Course at Kiawah, S.C.; 6th at Crooked Stick; 7th at the Karsten Course at Arizona State University; 11th at The Country Club Glenmoor in Japan's Chiba Prefecture; and the famous island

green 17th hole at TPC Sawgrass.

Perry Dye designed the hole at Riverdale; co-designed the hole at Glenmoor with his father, Pete; and built the hole at Karsten, a course designed by Pete. The other courses represented at the Illinois Golf Center are Pete Dye designs.

The holes range from 56 to 150 yards long, according to Jeff Potts, Dye's lead designer on the project. The major design challenge was to keep golf balls in the field of play, while the contractor, Wadsworth Golf Construction Co., has other

entanglements to overcome.

"We've directed people the correct way by placement of hazards and tees," Potts said. "There's some questionable or a little too tight. Protective netting will be around the whole driving range."

"We've put the shortest holes in the tight areas and the longer holes in more-open areas, angled them away from the streets, and placed tees next to the boundary lines. We gain a little bit of usable space by doing that, as well as keep the balls

contained within the course. We've also placed hazards between holes in tight areas so players play away from snug areas."

The main street level of downtown Chicago is about 50 feet above the course, Lake Michigan and Chicago River. Designers are constricted by — and Wadsworth crews confronted by — the physical engineering issues of the site. Storm drainage passes through the property at certain elevations and the course must gravity drain to those areas.

Because it is an abandoned rail yard, crews must check abandoned utilities, avoid utilities in use, and obey city codes concerning separation from certain utilities.

"Then, we're also limited by the availability of good soil," Potts said. "We're having to separate good soil from bad and use the bad soil for foundation work and good soil as a growing medium."

"To stay within budget we can't import as much dirt as we would like to in order to put a cap over everything."

The driving range and practice tees were scheduled to be planted and sodded at the end of September. The range should open in the springtime. Potts hopes shaping of the course will be finished before the ground freezes. It so, it will be dormant seeded, and, in the spring damaged turf will be repaired so play can begin next year.

"It's certainly unique," he added. "I've seen others try to do the same thing. I don't think any will be near the magnitude of this project, where you can play nine holes of golf."

## Catamount project takes giant step

Continued from page 3

come without cost. Browne said developers have already spent millions of dollars in the permit process.

"We impacted about eight acres of wetlands. More than half of that was just a depression in a hayfield that holds a little water right after a big storm," Browne explained.

"We spent \$1 million for a 700-acre ranch to mitigate the wetlands. We built 20 ponds and more than 100 acres of new wetlands."

The former Steamboat owners and Mitchell Energy form an experienced team.

Steamboat is the third busiest ski area nationwide. The former Steamboat owners played a major role in the area's success and will contribute their knowledge in that arena.

Mitchell is the principal developer of The Woodlands complex outside Houston. The community boasts 81 golf holes with another 99 planned for the future.

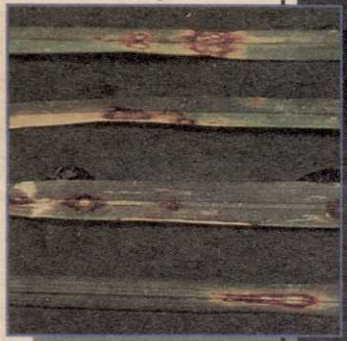
Carlton Gipson, Mitchell's in-house architect, did a preliminary routing for the two courses.

"We'll bring in other finish architects to do the final routing. We haven't decided who that will be," Browne said.

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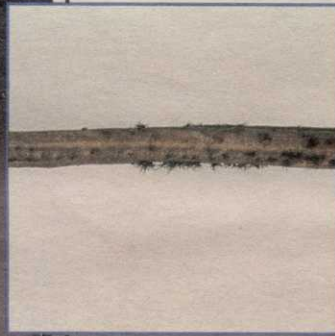
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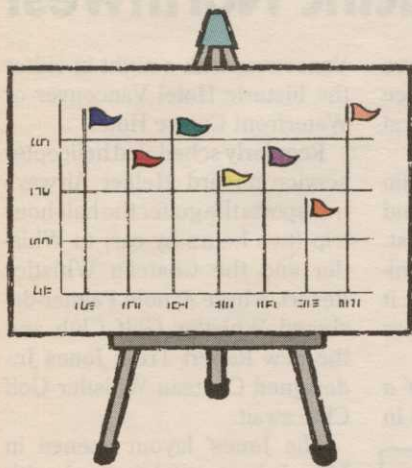
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CIRCLE #126



## BRIEFS



## LUERSEN TO MANAGE THE WOODLANDS

THE WOODLANDS, Texas — Tom Luersen has been promoted to managing director of The Woodlands Conference Center and Resort here. In his new position, Luersen is responsible for the overall management and operation of the conference center, including the Tournament Players Course at The Woodlands. Luersen joined The Woodlands in 1991 as director of operations. Prior to that, he served as resident manager at the Kingsmill Resort and Conference Center in Williamsburg, Va.

## GREAT AMERICAN RELOCATES

DALLAS — Great American Clubs, Inc. has relocated its corporate offices here, according to President Paul John Daly. Note the new address and phone numbers: Great American Clubs, Inc., 3131 McKinney Ave., Suite 200, Dallas, Texas, 75204; telephone — 214-871-6070; fax — 214-871-3117.

## CAMPBELL TO DIRECT GOLF ON LANAI

ISLAND OF LANAI, Hawaii — Gary H. Campbell has been named director of golf here. His responsibilities will include all aspects of administration and operation of the island's two resort courses: The Challenge at Manele (opening in December 1993) and The Experience at Koele. Campbell was most recently senior vice president of operations at Waikoloa Land Company in Kohala Coast.

## BRADY TAKES OVER AT LEE'S HILL

FREDERICKSBURG, Va. — GolfSouth and Lee's Hill Partnership, owners of the Lee's Hill Golf Club here, have announced the appointment of Marc Brady as club manager and golf professional. Prior to joining Lee's Hill, Brady was head pro at Killbuck Country Club in Tallahassee, Fla., home of the PGA Sprint Classic.

## GPA SECURES TWO CONTRACTS

HORSHAM, Pa. — Golf Property Analysts (GPA) has been retained by Commerce Bank, N.A., to perform a market value appraisal for the Talamore at Oak Terrace Country Club project here. Laurence Hirsh, GPA president, will direct and manage the project. Hirsh, a member of the Society of Golf Appraisers, added that GPA has been retained to provide appraisal services for the proposed Hartefeld National Golf Club in New Garden Township, Chester County, Pa.

# NY Audubon to purchase Ocean Course for \$27 million

By HAL PHILLIPS

CHARLESTON, S.C. — With a bid of \$27,000,100, the Audubon Society of New York has entered the golf management business.

The not-for-profit organization based in Selkirk, N.Y., was the high, lone bidder for Pete Dye's Ocean Course on Kiawah Island, which had been developed by the failed Landmark Land Co. Audubon purchased the seaside masterpiece from Resolution Trust Co., the federal agency charged with selling off Landmark's former holdings. Federal bankruptcy court must still approve the sale.

Audubon was able to rustle up the \$27 million through its alliance with two investors: VIT, an arm of Richmond, Va.-based AMF Companies; and Kiawah Resort Associates, the owners of undeveloped residential land on Kiawah Island.

VIT had already purchased the Kiawah Island resort complex — save the Ocean Course — from the RTC in July. Because of the course's environmental sensitivity, the RTC was obligated to allow qualified conservation groups to bid separately on the Ocean Course, as stipulated by the Coastal Barrier Improvement Act.

"It's our belief at N.Y. Audubon that in order to do long-term good, we have to merge environmental ethic with the business world," said N.Y. Audubon President Ron Dodson. "We recognize that we can't run down to the local bank and withdraw \$27 million. It's not unusual for conservation groups to enter

Continued on page 29

# Kemper sees opportunity in ownership and management

By PETER BLAIS

Common wisdom these days holds that most of the profits are made in managing a golf course, while most of the risk is found in owning one.

That's why it's surprising to hear a management executive, particularly someone with the reputation of Kemper Sports Management's Douglas Schmidt, come down on the side of ownership over management.

"We're into owning, leasing and managing — in that order of preference," said the Northbrook, Ill.-based firm's president and chief operating officer. "With management contracts, if you do a great job, the owners eventually figure they don't need you. If you do a bad job, you don't deserve to be there."

"The only way to succeed is to be mediocre. None of the people here are interested in mediocrity."

Kemper is involved with 19 facilities. It

owns Royal Melbourne in Long Grove, Ill.; Crowfield Golf & Country Club in Goose Creek, S.C.; Pine Forest Country Club in Summerville, S.C.; Golf Club of West Virginia in Parkersburg; Carolina Springs Golf Club in Greenville, S.C.; and Holly Hills Country Club in Frederick, Md.

The company leases Kemper Lakes Golf Club in Long Grove; Patriots Point Links in Mt. Pleasant, S.C.; and the Chicago Park District's six golf courses and two driving ranges.

"We've vastly improved Chicago's properties already," Schmidt said of the lease agreement the company signed in April. Kemper has so far removed many of the asphalt (that's right) tees at many of the courses, professionally edged bunker faces, invested thousands of dollars in lightweight mowing equipment and improved the irrigation system at 18-hole Jackson Park. "We'll look at the

Continued on page 30

# Dodson, Lesnik to speak at Public Golf '93



A TWO-DAY NATIONAL CONFERENCE DEDICATED TO THE NEEDS OF MANAGERS OF PUBLIC GOLF FACILITIES

CHARLESTON, S.C. — Ron Dodson, president of the N.Y. Audubon Society, and Steve Lesnik, president and CEO of Kemper Sports Management, will both speak at Public Golf '93, sponsored by Golf Course News and scheduled for Nov. 14-17, here at Wild Dunes.

Dodson — whose non-profit organization just purchased the Ocean Course on nearby Kiawah Island (see story above) — will discuss Audubon's Cooperative Wildlife Sanctuary Program for Golf Courses, which has created bird sanctuaries at 800 golf courses nationwide. The pro-active program, founded in 1990, has proved to be a significant environmental and public relations success.

Lesnik, whose firm manages 19 courses across the country (see story above), will lead a seminar dealing with alternative management strategies. Kemper recently secured the management con-

Continued on page 29



## ONGOING ASSISTANCE

South Florida Golf Academy Director Tom Welz assists student Jeff Priest at The Carolina Club in Margate, Fla. Priest is participating in one of the monthly clinics, sponsored by The Carolina Club and Broward County, that helps physically challenged golfers get back in the game. The clinics are led by teaching professional Frank Fitzsimmons, who is also the Circuit Court coordinator for the Americans with Disabilities Act (ADA). "Many clubs around the country have offered one-time clinics for the physically disabled," said Carolina Club spokeswoman Elaine Fitzgerald. "It gets them interested, but then what? We hope we're taking a lead that other golf clubs will follow in offering regular, ongoing clinics."

# Publicly traded AGC spinoff acquires first course, Desert Lakes

FORT MOHAVE, Ariz. — National Golf Properties, Inc. (NGP), the publicly traded golf course owner, has acquired Desert Lake Golf Course here.

The property, NGP's first acquisition since its initial public offering in August, was purchased from Desert Lakes Development L.P. for \$3.15 million.

Located a few minutes from Bullhead City, Ariz. and Laughlin, Nev., Desert Lakes is one of just four golf courses in the region. Its amenities include an 18-hole, 6,569-yard course that features two lakes. An aquatic driving range features two island, target greens.

NGP is a self-administered real estate investment trust based in Santa Monica, Calif. President Craig Price also serves as president of Santa Monica, Calif.-based American Golf Corp. (AGC), which operates 153 courses nationwide. The management contract for Desert Lakes has been awarded to AGC.

NGP's portfolio now includes 24 daily-fee, 13 private and 11 resort courses.





The joys and practicality of helicopter transportation aren't just for skiers anymore.

## Marketing Idea of the Month

# Copter-golf takes off in Pacific Northwest

By PETER BLAIS

BRITISH COLUMBIA, Canada — Transporting skiers from city to slope by helicopter has been a very successful marketing tool for the ski industry. Now golf courses are trying the same strategy in Western Canada.

Canadian Pacific Hotels & Resorts has begun offering a four-night, five-day package that helicopters golfers to several of British Columbia's top layouts.

Approximately 125 people have plopped down \$960 U.S. apiece on the package since it was first introduced this spring.

"It's going very well," said Colin Yorath, coordinator of inbound golf with Golf Holidays/West. "Maybe not as well as we'd initially hoped for, but we expect it to pick up next year and the year after that."

The *Heli-Golf Adventure of a Lifetime*, as it is billed, starts in

Vancouver with a night in either the historic Hotel Vancouver or Waterfront Centre Hotel.

Regularly scheduled helicopter service aboard Helijet Airways transports the golfer the half-hour trip (two hours by car) to Whistler and the Chateau Whistler Resort, where Arnold Palmer-designed Whistler Golf Club and the new Robert Trent Jones Jr.-designed Chateau Whistler Golf Club await.

The Jones' layout opened in May. It is a mountain track with elevation changes of more than 300 feet. "It's an unbelievably beautiful course," Yorath said. "We tried to get permission to land on the 18th fairway. But the municipal officials said 'no.'"

Victoria and a pair of Robinson-designed layouts are next on the agenda. A night at the Empress Hotel is sandwiched between rounds at Ted Robinson's Olympic View Golf Club and Bill Robinson's Cordova Bay Golf Club. "We may add private limousine service to and from the hotel in Vancouver next year," Yorath said. "We could add another golf course, Gorge Vale Golf Club, too. The price will be about \$100 more in 1994."

Most golfers have come from the United States, Yorath said. The package has been popular as a corporate incentive bonus for top salespeople — groups have ranged from eight to 32 people.

That's created a few problems on the Vancouver-to-Whistler leg since helicopters carry only 12 people and make just three regular runs per day.

"But Helijet has been very good about reworking its schedules," Yorath said.

Rates are per person, double occupancy and include hotel accommodations, greens fees, pull carts, hotel/course return transfers, Helijet transfers and taxes. An extra night's stay in Victoria is available for \$99.

The golf package will not be offered after Oct. 15 since snow will have closed the Whistler courses by then. The program will resume next May 15.

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## CMAA sponsors holiday campaign

ALEXANDRIA, Va. — The Club Managers Association of America (CMAA) is sponsoring the two-tiered "Clubs Collecting for Communities" to aid local communities across the country during the holiday season.

Phase I, the food and clothing drive, is scheduled to start this month and run through November. The "Toys for Tots" drive, or Phase II, is scheduled to start at the beginning of December.

For more information, contact the CMAA at 703-739-9500.



## With AMF backing, Audubon buys Ocean Course

Continued from page 27

into these types of alliances. We had to recognize the financial partner had a significant interest in making its investment worthwhile."

According to Beverly Armstrong, vice chairman of VIT, the joint venture has not yet decided who will physically manage the course. Dodson added that wholesale management changes are not foreseen.

The Audubon agreement with VIT calls for a two-year develop-

ment moratorium on and around the Ocean Course. During those 24 months, Audubon will conduct a thorough natural resource study to determine what plants and fauna call the site home. The Audubon Society will also continue its ongoing relationship with the United States Golf Association, which is conducting a \$3 million study at Kiawah documenting the environmental effects of golf maintenance practices.

"At the end of the two-year

study period, we'll know better about what will be done at the site, if anything," Dodson explained. "A conservation management plan will then take effect, with goals of protecting this sensitive habitat, preserving the course and creating an environmental handbook for all golf course superintendents."

N.Y. Audubon is no stranger to golf course matters. In 1990, it founded the The Audubon Cooperative Wildlife Sanctuary Program for Golf Courses, which

encourages the creation of bird sanctuaries on golf courses. There are 800 superintendents already involved in the program.

"Migratory birds don't recognize state lines and neither do we," Dodson continued. "We already have an involvement in the industry and we recognize the value of golf courses as open space. We've been involved with Pete Dye and the Ocean Course from the beginning."

Three other conservation groups had displayed an interest in the Ocean Course: The Low Country Open Land Trust based here; the North American Land

Trust of Chadds Ford, Pa.; and the Lewis Ginter Botanical Gardens of Richmond, Va. The latter group had enjoyed the backing of VIT, but the relationship disintegrated in the weeks before the Sept. 14 sale.

"As we got further into the process," Armstrong explained, "there appeared to be a legal problem with whether they [Ginter] could do it or not. We decided to part company and were introduced to the N.Y. Audubon group."

"As it has turned out, it's probably the most natural fit we could have hoped for."

## Public Golf '93

Continued from page 27

tract for six Chicago Park District courses.

Public Golf '93 is a national two-day conference is designed for managers, owners, operators and developers of public golf facilities — daily fee, resort and municipal.

More than 20 speakers will discuss topics including: Positioning Your Course For Added Value; Marketing, Advertising and Promotion on a Shoestring; and Saving Money on Maintenance. Several sessions will address improving your margins in traditional profit centers, such as food & beverage, pro shop and cart rental.

Recent additions to the speakers program include Tary Kettle, president of Masters Golf Corp., a consulting firm specializing in turning around flagging public golf operations; Elaine Fitzgerald, president of Fitzgerald Productions, a firm specializing in affordable promotion; and Dave Richards, president of Golf Marketing Services.

"I think attendees will find Steve Lesnik, Tary Kettle and Ron Dodson very interesting, informative speakers," said Hal Phillips, *Golf Course News* editor and Public Golf '93 program chair. "Ron has some very progressive ideas regarding the common interests of business and conservation groups."

"Tary's firm deals almost exclusively with unprofitable public golf operations. He plans to discuss what not to do when managing a daily-fee golf operation."

"Steve spoke at Public Golf '92 and we're very pleased to have him back. In addition to providing full-service golf management services, Kemper is involved with public relations, hospitality consulting and professional sports management and promotion. Steve has a big picture approach to management strategy."

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CIRCLE #128



## Kemper Management

Continued from page 27

irrigation systems at the other facilities as well and make additional investments where it makes sense," Schmidt said.

Schmidt said Kemper believes in re-investing in its properties in order to *optimize* rather than *maximize* a facility's potential. "You can maximize profits right away by just taking money out of a course and putting nothing back in. That works well for about 2-1/2 years. You don't notice too much the first year. Then the second everything starts falling apart until nothing is left."

"We believe in optimizing. It doesn't maximize your return in the short term. But it makes the product better each year

and allows the owner to make more profit for a longer time."

While it prefers ownership and lease arrangements, the company has not forsaken the management-only market. Kemper has management contracts at Vernon Hills (Ill.) Golf Course as well as Pipestone and Mound Golf Course, both in Miamisburg, Ohio.

"We strongly believe in giving the golfer value for his dollar. Kemper Lakes greens fees are \$95 and Vernon Hills \$10. Both are full all the time. That's because we provide value for both types of golfer. We take a lot of pride in that."

Kemper's mission, Schmidt said, is one of providing quality, not quantity. The company plans to acquire two to four courses per year. "That's a reasonable number we can absorb in a quality manner," the com-

pany president said. "We're excited about the opportunities out there. But we'll only do things that make sense."

Making those judgments will be an experienced management staff.

Chairman of the Board James Kemper is former chairman of the board of Kemper Group. He founded Kemper Lakes and oversees major policy decisions.

Chief Executive Officer Steven Lesnik has 25 years experience in communications, marketing and sports management. Before founding Kemper Sports in 1978, he was vice president of Kemper Group.

Other key personnel include Schmidt, vice presidents Ben Brundred, Tom Lenz and Robert Wallace, Chief Financial Officer Bradley Stake, Marketing Manager Jeff Hunt and Director of Golf Bob Spence.

## Landmark re-emerges

Continued from page 1

a 36-hole development planned across the street from the TPC at Scottsdale, an 18-hole public layout under consideration in Indio, Calif., and an 18-hole course along the coast of Chile scheduled to begin construction later this year.

"Development has slowed across the country. But considering how difficult things have been since the late 1980s, we're doing pretty well," said Brian Curley, former director of golf course design construction for Landmark Signature Courses and a partner in the new firm.

Construction should begin in early 1994 on the first 36 holes at Snow Mountain Resort, located on 3,800 acres of Paiute land 12 miles north of Las Vegas. All four courses should be completed within two years, according to former PGA Tour player Johnny Pott, a Landmark partner and project supervisor.

Pete Dye, Pott and Curley are combining to design the courses, which will cost about \$7 million piece. A single clubhouse will serve all 72 holes. The entire golf project is pegged at \$40 million. Casinos, hotels and residential areas are also planned.

"There are definite advantages to working with Indian land," Curley said. "There is no land cost. They have very well-established water rights. You only have to deal with federal agencies and there are no taxes. Imagine all those benefits on a site just 12 miles from downtown."

Despite its proximity to Las Vegas, the Paiutes originally planned not to have gambling at the resort. That restricted the type and amount of financing to a bond issue or traditional financing, Curley said. The tribal council now plans casinos, which has attracted more financing options, he added.

"The council is meeting soon to decide what to do," Curley said.

Paradise Ridge in Scottsdale is a year away from starting construction, according to head partner Ernie Vossler. The 2,000-acre project will have a large residential area. The Indio, Calif., facility would be adjacent to Del Webb's Sun City project, and the Chile layout will be an hour from Santiago.

Landmark Land Co.'s financial woes have been well-chronicled. The Resolution Trust Corp. recently auctioned off the bankrupt firm's major properties, including PGA West, Carmel Valley Ranch, Mission Hills Country Club, LaQuinta Hotel Golf & Tennis Resort, Palm Beach Polo & Country Club and Kiawah Island Resort (see related story, page 27).

But despite those problems, Landmark Golf's partners didn't hesitate to use the name. "People in the golf business were aware of the financial situation [that brought down Landmark Land Co.]," Curley said. "Landmark's reputation for creating quality facilities has not been tarnished. The problems that hurt Landmark weren't particular to Landmark. Just about anyone dealing with S&Ls had problems during the 1980s."

National Golf Foundation Vice President Rick Norton agreed. "I can't see that the name or association is a positive or a negative," Norton said. "They obviously have good experience in the golf business. They certainly can't be held responsible for Landmark [Land Co.'s] situation."

Landmark Golf's partners include former Landmark Land executives Vossler (ex-senior VP), Pott (helped design/build Carmel Valley and PGA West), Curley, William "Buzz" Gill (ex-president of Landmark Management Co.) and Chuck Fairbanks (ex-president of Landmark Land Co. of Arizona Inc.).

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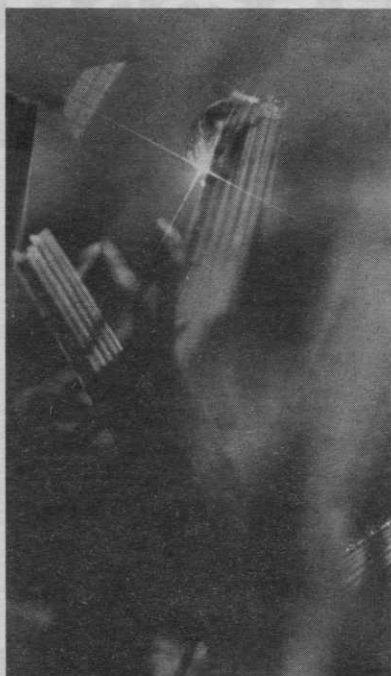
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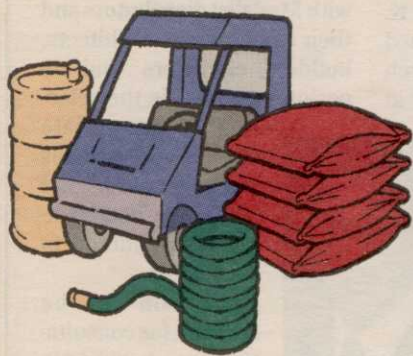
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## BRIEFS



## HAYS PROMOTED AT HYUNDAI

SANTA ANA, Calif. — Jim Hays has been promoted to the position of national field service technician at Hyundai Golf Cars, U.S.A. Headquartered here, Hays will work with Hyundai's field service manager, Dennis Mahan, and Hyundai dealers to ensure the cars are properly serviced and maintained. He will also advise on golf car technical modifications and updates. Prior to joining Hyundai, Hays spent 15 years in the marine maintenance and manufacturing business.



Jim Hays

## DAKOTA'S CHANGE OF SCENE

GRAND FORKS, N.D. — A new post office here has facilitated an address change at Dakota Peat & Blenders and Pioneer Peat Inc. Following are the new addresses and numbers (note the new p.o. box numbers): Pioneer Peat, Inc., P.O. Box 14088, Grand Forks, N.D., 58208-4088 — Telephone: 701-746-4300 — Fax: 218-773-3151; Dakota Blenders, Inc., P.O. Box 14088, Grand Forks, N.D., 58208-4088 — Telephone: 701-746-4300 — Fax: 218-773-3151.

## NUMEX ROYALTIES ROLLING IN

LAS CRUCES, N.M. — An improved, seeded, turf-type Bermudagrass developed at New Mexico State University continues to bring money to the NMSU-based New Mexico Crop Improvement Association for continued agricultural research. Fourth year sales of NuMex Sahara by Phoenix-based Farmers Marketing Corp. have generated earnings of more than \$60,000 for the association. To date, royalties to NMSU from this variety exceed \$250,000. Arden Baltensperger, NMSU agronomy professor emeritus and Farmers Marketing turfgrass research director, developed NuMex Sahara with USGA support.

## LESCO VIDEOS AVAILABLE

CLEVELAND — Lesco, Inc. has released seven new videotapes designed to educate viewers on various aspects of turfgrass management. The video library, which comes in standard VHS form, includes the following titles: *Common Turfgrass Weeds*, *Common Turfgrass Insects*, *Common Turfgrass Diseases*, *Rotary Spreader Calibration*, *Turfgrass Renovation*, *Irrigation Maintenance and Troubleshooting*, and *Floating Fountains*. To suggest a topic or order an existing tape, contact Art Wick at 1-800-321-5352 (in Cleveland, 333-9250), or fax your request to 216-333-9664.

## Golf Car Report

## Manufacturers brace for Calif. emissions ruling

By HAL PHILLIPS

SACRAMENTO, Calif. — Later this month, the Air Resources Board (ARB) of California — the state agency dealing with atmospheric regulation — will issue its recommendation on when and how gas-powered golf cars will be eliminated from America's most emissions-conscious state.

Golf car manufacturers are preparing for the worst.

Industry estimates place the number of gas-powered golf cars in California at approximately 14,000. Eventually, state mandate — in some form or another — will force the switch to an entirely electric-powered golf car fleet.

The National Golf Car Manufacturers Association (NGCMA) — which estimates the cost of this switch-over, for an individual golf course operator, to be \$300,000 to \$1 million — argues that gas and electric cars cannot be stored together, meaning a new cart storage facility must be built during the transition to electric.

The best indication of how harshly gas-powered carts will be treated may lie in the



*Manufacturers normally resist control put on them by this agency and those regulated for the first time react most vociferously.'*

— Jerry Martin, California Air Resources Board

regulation of lawn and garden machines. For instance: All lawn and garden engines (riding mowers) produced after Dec. 31, 1993, will be required to comply with stringent exhaust emission standards relating to hydrocarbons, oxides of nitrogen, carbon monoxide and particulate matter. Further, no new lawn and garden engines will be allowed to replace pre-1993 models after Dec. 31, 1998.

In ARB lingo these are considered "first-tier" regulations — and the NGCMA would like nothing better than to be considered for first-tier status. However, the ARB-recommended regulations may well be more harsh than those assigned to lawn and garden equipment.

"The fact is, there are no rules — so there is no timetable regarding the elimination of gas-power golf cars," said Jerry Martin, a spokesman for the ARB. "The staff is now preparing its recommendations. The staff report is due out in late October."

In 1991, the NGCMA petitioned the ARB to regulate golf cars by first tier standards because, "similar engines should be similarly regulated," reads the NGCMA position paper. "Lawn and garden equipment

Continued on page 33

## Playing the market: Club Car, Inc. to offer public stock

AUGUSTA, Ga. — Add Club Car Inc. to the growing number of golf industry firms attempting to quickly raise cash through public stock offerings.

The golf car manufacturer, based here, has filed a registration statement with the Securities and Exchange Commission to offer 4.125 million shares via NASDAQ. The initial offering is scheduled to begin later this month.

According to a prospectus filed with the SEC, Club Car expects to garner between \$14 and \$16 per share, 2.7 million of which will be offered in the form of common stock. The remaining 1.425 million shares are to be sold only by designated stockholders.

Offering public stock is nothing new to the consumer side of the golf industry. Shaft and club manufacturers like Aldila and Callaway have already blazed that trail. For the non-playing golf course industry, Club Car and National Golf Properties, Inc. (NGP) — the American Golf Corp. spinoff — are pioneers.

However, unlike NGP, which plans to use the public money to fund more course acquisitions, Club

Continued on page 33

## Earthgro, Harmony sign joint marketing, manufacturing pact

LEBANON, Conn. — Earthgro, Inc., a manufacturer of natural horticultural products here, has reached a joint marketing/manufacturing agreement with Harmony Products, Inc., an organic-based fertilizer manufacturer and waste management firm based in Chesapeake, Vir.

The allied companies will offer a full line of organic, organic base and natural fertilizers in areas of the United States where the firms believe environmental sensitivity is very high.

Under the five-year agreement, Earthgro will be the primary distributor of Harmony's high-analysis, slow-release organic base turf and garden fertilizers for both the retail and professional markets in the Northeast. Harmony will be the sole manufacturer of Earthgro's natural fertilizers products in the Eastern U.S. The relationship, which includes certain per-performance requirements on both companies, is designed to combine the talents of

Continued on page 34

## IA Exposition sold out in San Diego

By HAL PHILLIPS

SAN DIEGO — Attendees at the upcoming Irrigation Association Exposition and Technical Conference will witness the largest display floor in the event's history, according to Irrigation Association Executive Director Charles "Pepper" Putnam.

"It'll be the largest floor we've ever had and we're going to sell out," said Putnam, whose Association will play host to the world's largest irrigation products and service expo Oct. 31-Nov. 3, at the Convention Center here.

"As far as registrations are concerned, the volume of inquiries has been enormous," Putnam continued. "But we've averaged about 3,200 the last few years and I estimate about 3,800 this year."

"Because we're holding the event in such a large market, we'll have a huge number of one-day, walk-in attendees — specifiers and contractors who've probably never seen anything like it."

"I'm really very enthusiastic about how things are going, despite the economy. We never dreamed we would sell out."

Question about the Exposition and Technical Conference can be directed to the IA at its new number: 703-575-3551; or fax: 703-573-1913.

The Irrigation Association has moved its national offices from Washington, D.C. to Northern Virginia. The new address is:

Irrigation Association  
Suite 120  
8260 Willow Oaks Corporate Drive  
Fairfax, Va. 22031

## Century Supply Corp. purchased for \$40 million

MADISON HEIGHTS, Mich. — Century Supply Corp., one of the nation's largest wholesale irrigation distributors, has been purchased by the New Jersey-based holding company, Richton International Corp.

Headquartered here, Century maintains 25 branch offices in Florida, Illinois, Indiana, Wisconsin, Kentucky, Georgia and Missouri. The distributor

boasts annual sales in excess of \$40 million.

Richton officials have indicated the closing of the transaction is subject to conditions including the completion by Richton of proposed financing by the Michigan National Bank, additional subordinated financing to be provided by individuals, and the favorable action of the Richton Board of Directors.



## Bulmer to head Toro golf sales

RIVERSIDE, Calif. — The Irrigation Division of The Toro Company has added three national sales managers to its operations here. Don Bulmer has been promoted to national golf sales manager. He has been employed by Toro for 16 years and has held several positions in the Riverside operations, including midwest regional sales manager.

Jeanne Cantu has been named national specifications sales manager. She was promoted from her position as Toro's regional speci-

fications sales manager in Texas, where she has worked for the past year. Before coming to Toro, Cantu worked for a distributor in Florida as a specifications sales manager.

Mark Painter has been promoted to national contractor sales manager. A registered landscape architect, he has worked for Toro since 1989. Painter was formerly western regional business manager.

For more information, call the Riverside office at 909-688-9221.



Three new national sales managers at Toro (clockwise from top left): Don Bulmer, Jeanne Cantu and Mark Painter



## Nelson takes on product development

ALBANY, Ore. — Eric K. Nelson, Ph.D., has been named director of turfgrass research and product development at Medalist America Turfgrass Seed.

Nelson, who joined Medalist in 1989 as director of turfgrass research, will use his experience and education in turfgrass adaptation as well as agronomy to work

with Medalist distributors and their customers — architects, builders, engineers and superintendents — in the selection of appropriate species and varieties for golf course and landscape establishment, in addition to renovation.

Nelson can be reached for consultation at 1-800-568-TURF.



Eric Nelson

## ConVault sues for alleged patent infringements

DENAIR, Calif. — ConVault, Inc., a manufacturer of fire-resistant, concrete-vaulted, aboveground fuel storage tanks, has filed patent infringement lawsuits against three competitors. ConVault is seeking both monetary damages and injunctive relief that would halt production of the alleged infringing tanks.

According to ConVault President Tom Lindquist, suits have been filed against Nebraska Welding Ltd. of Omaha, Neb.; Hi-Tech Vaults, a division of Hausner's Inc. of Drumright, Okla.; and Guardian Concrete, Inc. of Schenectady, N.Y. An action has been filed in the United States Court of Federal Claims stating that Nebraska Welding allegedly infringes six ConVault patents.

ConVault has filed suit in the U.S. District Court for the Northern District of Texas, claiming that tanks manufactured by Hi-Tech infringe five ConVault patents.

ConVault has been joined in the suits against Nebraska Welding and Hi-Tech by five of its licensees: Quickset, Inc. of Irvine, Calif.; Old Castle, Inc. of South Bethlehem, N.Y.; ConVault Mid-Atlantic, Inc. of McLean, Vir.; Earth Protection Systems, Inc. of Bridgeview, Ill.; and ConVault-Florida, Inc. of Wildwood, Fla.

ConVault, Inc. and its licensee, Old Castle, filed jointly against Guardian Concrete in the U.S. District Court for the Northern District of New York, alleging that ASTs manufactured by Guardian infringe five ConVault patents.

## Mace Sod has new name: Multi-Turf

SOUTH BAY, Fla. — Mace Sod Service, Inc. has changed its name to Multi-Turf, Inc. The new name will appear on all bids, projects and billings issued after Sept. 1, 1993. Multi-Turf will continue to guarantee year-round service from more than 7,000 acres of Everglades muck-soil-grown Floratam, FX-10, Bitter Blue and 419 Bermudagrasses. The firm will also continue to offer its toll-free Lawn Care Help-Line (1-800-868-6223).

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## Emissions ruling in California

Continued from page 31

utilize the same engines as golf cars, except that golf cars emit fewer pollutants over a comparable time period because they do not idle."

According to their position paper, the golf car manufacturers were under the impression their request would be granted. The NGCMA then spent "in excess of \$3,000,000 to research and develop gas-powered golf cars that would meet reduced emission standards, well aware that zero emissions standards were the ultimate ARB staff objective."

"However," the paper continues, "ARB recanted those assurances in August 1992, and now proposes, by Jan. 1, 1995, all golf cars... must be electrically powered."

Martin and the ARB take issue with this representation. "Manufacturers normally resist control put on them by this agency," he said. "And those regulated for the first time react most vociferously."

"In 1990, when the lawn and garden regulations were instituted, golf cars were included in that category. The golf car industry then asked not to be grouped in that category... The golf car manufacturers said, 'We think we're recreational vehicles,' and they were removed from the lawn and garden category. At that time, there wasn't an imminent recreational vehicle restriction."

"Now, three years later, they want first tier standing because recreational vehicles will be regulated — and there have been changes in the lawn and garden regulations."

Martin said he believed the ARB decision is still up in the air.

"The board can be persuaded and can change its mind," he said. "The removal [of golf cars] from the grouping in 1990 is a prime example."

## Club Car offering

Continued from page 31

Car will look to reduce its debt and fuel growth and expansion. Further, Club Car will offer its stock through the newer NASDAQ system, while NGP has chosen to go through the New York Stock Exchange.

In its prospectus, Club Car indicated its share of the domestic new car market was 32 percent, with annual net sales (including utility vehicles) at more than \$125.8 million through the quarter ending June 27. The company's net sales for 1992 were \$136.47 million.

## Tempest relocates; hires Hone as plant manager

FRESNO, Calif. — Tempest Controlled Airstreams, the manufacturer of power blowers for the fire service, has announced the relocation of its headquarters and manufacturing operation to a larger, more modern facility here in Fresno.

Note the new address and phone numbers: Tempest Controlled Airstreams, 4645 N. Bendel Ave., Fresno, CA 93722; 1-800-346-2143 or 209-277-7577; Fax: 209-277-7579.

Tempest has also announced the appointment of **Ralph Hone** as plant and production manager. Hone comes to Tempest with an extensive background in plant production, staffing, scheduling and supervision. He has worked in the manufacturing area for 11 years with Smithers-Oasis.

## Jacques named VP at Ransomes

MINNEAPOLIS, Minn. — Marv Jacques has been promoted to vice president of engineering and technology at Ransomes America Corp.

Jacques previously served as director of engineering and technology. In his new position, he will assume responsibilities for product management and testing, including planning and defining products for Cushman, Ryan and Ransomes brands. Jacques will remain involved in each of the company's three business groups: Turf, professional lawn care, and industrial/commercial.



Marv Jacques



Pat Milke

Milke joined Ransomes in 1989 as an electronic technician. He previously worked as customer service supervisor for Advanced Energy, an electronics firm based in Fort Collins, Colo.

Ransomes America has also announced the appointment of **Pat Milke** to the position of marketing coordinator. Milke will assist in the development of print and audio/visual materials for advertising and dealer training. He will also work with each of the company's three divisions, and his responsibilities will include the preparation and shipment of equipment for display at trade shows.

## John Deere 400 Series product named to 'The Agricultural Engineering 50'

RALEIGH, N.C. — Agricultural Engineering magazine has named the John Deere 400 Series heavy-duty lawn & garden tractors to "The Agricultural Engineering 50" outstanding innovation in product or systems technology — 1993." The company was recognized by a panel of national engineering experts.

The panel selected developments that embody application of new technology or the innovative application of older technology.

"This honor was earned by a top-flight design team," said Don Henderson, general manager of the John Deere Engineering Group in Horicon, Wis. "The 400 Series tractors include 50 new or enhanced features that outperform and outlast the 10-year-old line they replace."

The AE 50 recognition program is conducted each year

by Agricultural Engineering magazine to emphasize the important role of new products and systems in transferring technology to the marketplace for application in a wide spectrum of uses.

Henderson said the team leadership included Roger Reilly, project engineer; Bill Cameron, senior engineer; and Dave Larson, division engineer.

They used many advanced computer-aided design techniques, such as 3-D imaging to eliminate making prototypes in early stages of design and laser digitizers that allow modifications in later stages.

They incorporated engineering thermoplastic compounds to replace steel because they are resilient and more easily shaped. They reduced the number of parts in the new model line-up from 1,250 to just 650.

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CIRCLE #133

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CIRCLE #134



# Trend continues: Flowtronex joins forces with PSI

Continued from page 1

the economy."

Childers added that each of the two companies had "a vastly different, but both very successful, sales philosophy. The combination should prove interesting."

"It really is a match made in heaven," said David Brockway, who helped found Flowtronex in Tyler, Texas, in 1986 and will serve as president of the new Flowtronex PSI Ltd. "Everyone's excited about it. It's a case where one and one equal four. Basically, we had strengths where they had weaknesses, and *vice versa*."

Brockway said: "PSI has been known for

its very strong distributor and sales rep network. Flowtronex, on the other hand, has had a strong factory-direct sales network."

"PSI had made a real move over the last couple years into the technological forefront. That's been our [Flowtronex's] whole bag. We hung our hat on the VFD."

With the merger, signed on Sept. 8, Flowtronex is moving its operations to PSI's Dallas plant. PSI founder Jerry Pettengill is serving as chairman of the board and Emil Gram is general manager of the plant, where all production will take place.

"Competition was the driving force" for the merger, said Gram. "It's not unlike

what we're seeing throughout industry in general. We're ecstatic that we can take two good companies and make one great one."

"This merger will provide an outstanding opportunity to serve our buying and operating public."

Brockway pointed to improvements in service with the merger. Flowtronex and PSI each had 35 to 40 service centers. The 70 service centers "is unheard-of in this industry in terms of taking care of customers," he said. "In this industry, with this type of equipment, all of us realize service is the name of the game. The reason is that golf course superintendents are not trained

as mechanical or electrical engineers, and when the pump station goes down, they don't have people on the course who can fix it. They rely on the manufacturer."

Brockway said the new firm will do "a lot of product development that we couldn't do alone. People need to keep their eyes open for new developments."

Flowtronex PSI Ltd. will maintain close ties to Flowtronex International, which manufactures industrial pumping systems. And Brockway predicted, "We will continue to get spinoff development from that."

Flowtronex employed 37 in its turf division, while PSI employed around 65. Flowtronex employees will either move to Dallas, be absorbed in Flowtronex International, or elect to leave the company, Brockway said.

Brockway predicted the new company "will more aggressively pursue the total global market because that's where we will get the biggest increase in sales."

PSI and Flowtronex both have been independently selling equipment in Asia. "That is a very important market to us. And we are going to become a bigger player in that market," he said.

Stateside, Childers said the merger will help in one way: It will give customers "one less proposal to consider."



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## Earthgro-Harmony joint agreement

Continued from page 31

each firm by combining Earthgro's extensive marketing and distribution networks with Harmony's fertilizer/manufacturing know-how and capabilities.

Earthgro manufactures and distributes bagged soils, natural fertilizers and bark products from Virginia to Maine, while Harmony is best known for its patented, slow-release nitrogen technology. For more information, contact Earthgro at 203-642-7591 or Harmony at 804-523-2849.

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For more information, contact Ditch Witch c/o The Charles Machine Works, Inc., P.O. Box 66, Perry, Okla., 73077; or call 405-336-4402.

CIRCLE #301

## Pre-fab covered bridges from Rock

James H. Rock along with Industrial Steel Inc. have introduced their pre-engineered, pre-fabricated covered bridge for pedestrian and golf cart traffic. These structures are available in lengths from 30 to 120 feet and a clear usable width of 6 feet. Designed and built with the economic advantages of production fabrication but with the appearance of custom workmanship, these bridges are delivered in one or two sections and are ready to place via crane.

For more information, contact James H. Rock, 324 Bonnie Dr., Warner Robins, Ga., 31088; or call 912-329-9720.

CIRCLE #302

## Low-pressure sprinkler heads from Toro

Toro's Irrigation Division has announced an addition to its new line of low-pressure, low-precipitation rate large turf sprinkler heads. The 730/750 Series is designed for slower absorbing soils and for operating under a wide range of pressures.

Developed in conjunction with landscape architects and irrigation consultants, the 730 and 750 sprinklers have a 3-inch pop-up to clear tall grasses, color-coded nozzles for easy identification during installation and a variable stator to maintain constant rotation speeds no matter which nozzle is installed.

For more information, contact Toro's Irrigation Division, 5825 Jasmine St., Riverside, Calif., 92504-1183; or call 909-688-9221.

CIRCLE #303

## Classen sod cutter

Classen has added the new model SC-18 self-propelled 18-inch sod cutter to its line of turf equipment. The machine is powered by a 5.5 Honda engine and will cut sod up to a 2 1/2" depth. This heavy duty cutter is designed for golf course maintenance, rental cemeteries, and landscapers.

For more information, contact Classen at 1403 Pine Industrial Road, P.O. Box 172, Norfolk, Neb., 68701; or call 402-371-2294.

CIRCLE #304

# Golf Course Marketplace

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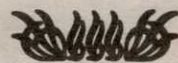
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# October

4-Dec. 10 — Rutgers Professional Golf Turf Management School in New Brunswick, N.J. Contact Cook College at 908-932-9271.

6-8 — How To Seminar on Golf Marketing in Daytona Beach, Fla. Contact Jim Castelo at 407-321-6322.

10-12 — NGF Seminar on Golf Ranges and Other Non-Traditional Facilities in Washington D.C. Contact Roger Yaffe at 407-744-6006.

14 — GCSAA seminar on The Microbiology of Turfgrass Soils in East Lansing, Mich. \*

18-19 — GCSAA seminar on Golf Course Restoration, Renovation and Construction Projects in Guelph, Ontario, Canada. \*

19 — Metropolitan GCSA Field Day in Rye, N.Y. Contact 203-656-0600.

19-21 — Golf Development Institute International in Las Vegas, Nev. Contact Hilary Kish at 714-499-5340.

21-22 — GCSAA seminar on Business Communication and Assertiveness Techniques in Melville, N.Y. \*

25 — GCSAA seminar on Turfgrass Stress Management in Little Rock, Ark. \*

26 — GCSAA seminar on Irrigation Scheduling Techniques in Little Rock, Ark. \*

26-28 — 48th Annual Okla. Turfgrass Conference & Trade Show in Tulsa. Contact Tonya Murray at 918-251-4868.

31-Nov. 3 — International Irrigation Exposition and Technical Conference in San Diego, Calif. Contact 703-524-1200.

31-Nov. 3 — National Institute on Park & Grounds Management Inc.'s 23rd Annual Education Conference in Denver. Contact 414-733-2301.

# November

1-2 — GCSAA seminar on Environmental Considerations in Golf Course Management in Bellevue, Wash. \*

5 — GCSAA seminar on Maximizing Turfgrass Disease Control in Rhinelander, Wis. \*

7 — Michigan Women's Golf Summit I at Ypsilanti, Mich. Contact 313-487-0407.

8-9 — Michigan Golf Summit III at Ypsilanti, Mich. Contact 313-487-0407.

8-9 — GCSAA seminar on Golf Course Construction Techniques and Management in Fargo, N.D. \*

9 — GCSAA seminar on Irrigation Efficiency in Rochester, N.Y. \*

9-12 — Turf & Grounds Exposition in Rochester, N.Y. Contact New York State Turfgrass Ass'n at 800-873-TURF.

10 — GCSAA seminar on Personnel Functions of the Golf Course Superintendent in West Palm Beach, Fla. \*

11-12 — GCSAA seminar on Disease Identification and Control in Hudson, Ohio. \*

14-16 — Golf Course News Public Golf '93 Conference in Charleston, S.C. Contact GCN conference group at 207-846-0600.

14-17 — Clemson Golf Turfgrass Conference and Championship in Myrtle Beach, S.C. Contact 800-476-GCSA.

14-18 — Professional Grounds Management Society's 82nd Annual Conference in Baltimore. Contact 410-584-9754.

15 — GCSAA seminar on Maximizing Turfgrass Disease Control in Myrtle Beach, S.C. \*

15-16 — GCSAA seminar on Golf Course Restoration, Renovation and Construction Projects in St. George, Utah. \*

15-16 — Oregon Turf and Grounds Maintenance Exhibit in Portland. Contact D.L. Tom Miller at 503-635-6867.

15-18 — Green Industry Expo/93 in Baltimore. Contact 404-973-2019.

17 — GCSAA seminar on Turfgrass Stress Management in Oklahoma City. \*

19 — GCSAA seminar on The Microbiology of Turfgrass Soils in Tehachapi, Calif. \*

Continued on next page

# Golf Course Marketplace

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29-30 — GCSAA seminar on Environmental Considerations in Golf Course Management in Omaha, Neb. \*

30-Dec. 2 — Southern Turfgrass Ass'n Annual Conference and Show in New Orleans. Contact 901-377-7194.

## December

1-2 — GCSAA seminar on Golf Course Restoration, Renovation and Construction Projects in Fond du Lac, Wis. \*

6-9 — Ohio Turfgrass Conference and Show, in Columbus; For information, call 614-292-2601

13-14 — GCSAA seminar on Environmental Considerations in Golf Course Management in Baltimore. \*

15-16 — GCSAA seminar on Disease Identification and Control in Pleasanton, Calif. \*

## 1994

## January

3-5 — Wisconsin Turfgrass & Green Industry EXPO in Madison. Contact Frank Rossi at 608-262-1490.

5-7 — Second Annual Turfgrass Management/Park Maintenance Training School in Albany, N.Y. Contact 800-873-TURF.

10-13 — 34th Virginia Turf and Landscape Conference and Trade Show in Richmond. Contact Bruce Tharp at 804-340-3473.

31-Feb. 7 — GCSAA Annual Conference and Show in Dallas. Contact 800-472-7878.

\* For more information contact the GCSAA Education Office at 800-472-7878 or 913-841-2240.

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CIRCLE #164



# Looking for well water?... Try fracture trace analysis

By HAL PHILLIPS

WATERTOWN, Mass. — When venerated Oakley Country Club here sought a long-term solution to its water needs, superintendent Bob Piantendosi took part in an interesting twist on an established, albeit unique technology.

The technology is called fracture trace analysis (FTA) — the study of cracks in the earth's surface using aerial photographs. FTA is most often employed by construction firms looking to identify places *not* to

build heavy structures. But the team at Oakley used the fractures to locate water sources on a site deemed dry by several engineering firms.

"The initial motivation for all this was to reduce our dependency on the public water supply," Piantendosi explained. "First of all, the cost of water is definitely going to escalate in the near future. And we were also concerned they [Watertown city officials] might charge us a sewage fee on top of the water." The project was especially

*'It's a matter of trying to interpret and look through things. It's sort of like staring at a person on the beach and figuring out what their skeleton looks like.'*

— Glacial geologist  
Patrick Barosh

delicate because Oakley is a very historic course. In 1899, Donald Ross was hired as Oakley's pro-greenkeeper — his first job after emigrating from Royal Dornoch. At the time, Oakley sported a rough-edged Willie Campbell design that Ross overhauled during his tenure.

Architect Stephen Kay, who has made a name for himself by retouching Ross designs, was retained last spring to handle the course-related amendments. His plans called for creating an

irrigation pond between tee and green at the par-3 15th hole.

This solution required a new, self-contained irrigation and pumping system, designed by Donald Trapp. Wells would be drilled to furnish the water. All told, the project was budgeted at \$250,000.

"A couple of different companies looked at the site," said Piantendosi. "After studying the parcel and various topographical maps, the initial readings told us this wasn't a great site for water."

Enter Patrick Barosh of Barosh & Associates in Concord, Mass., at the suggestion of an Oakley member who had experience in construction matters.

"It's a matter of trying to interpret and look through things," said Barosh, a glacial geologist by training. "It's sort of like staring at a person on the beach and figuring out what their skeleton looks like."

"Massachusetts is lucky because there are aerial photos taken over most of the region every two years. So it's like studying a very slow motion picture."

Barosh identified two lines of subterranean fractures — in the shape of a large "Y" — at the Oakley site. Using Barosh's sketches as a guide, Piantendosi attempted to mark these cracks with a series of pipe tracers, which look like small antennae and react to magnetism emitted through cracks in the earth's surface.

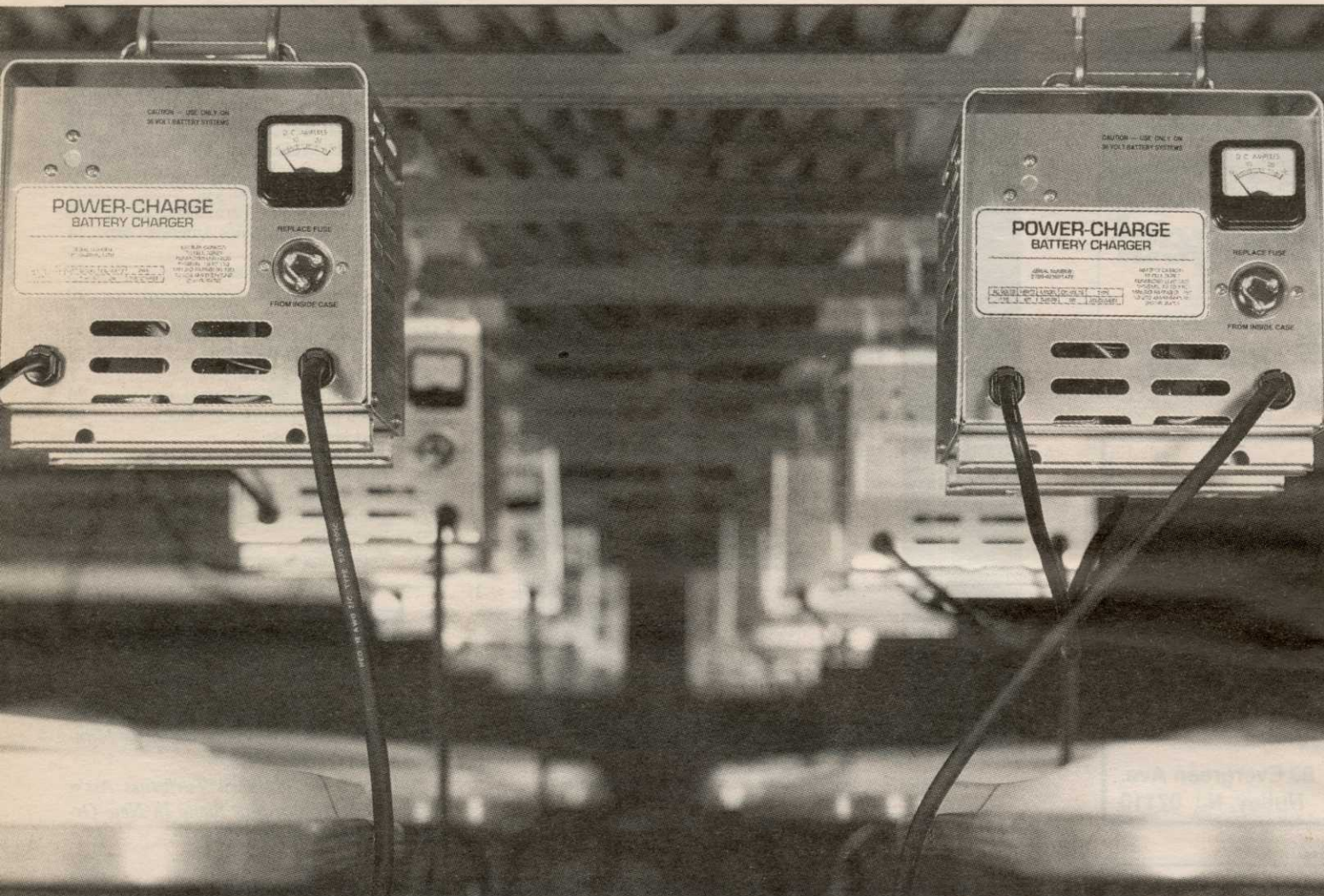
A pattern developed — the tracers mimicked the Barosh sketches. Wells were drilled along the "Y" at strategic points and plentiful water was found in every case.

"In the bedrock in this region, there is very little permeability," Barosh explained. "The water doesn't flow through the rock, unlike the thick sandstone layers in the West. So the only way water flows in this atmosphere is through these fractures."

Piantendosi warned against viewing fracture trace analysis as an expensive, space-aged technology. "This type of photography has been done for years," he said. "Most of the photographic work has already been done and is on file somewhere. You just need the right people to interpret it."

While finding such photography can require some "detective work," Barosh said there are plenty of government agencies that have been taking aerial landscape photos for years. The U.S. Geological Survey in Reston, Va., has a vast stockpile of photographs. EROS Data Center in Sioux Falls, S.D. also keeps track of aerial photography taken all over the country.

The Oakley redesign began at the close of September and is scheduled for completion by mid-December, said Piantendosi — weather permitting.



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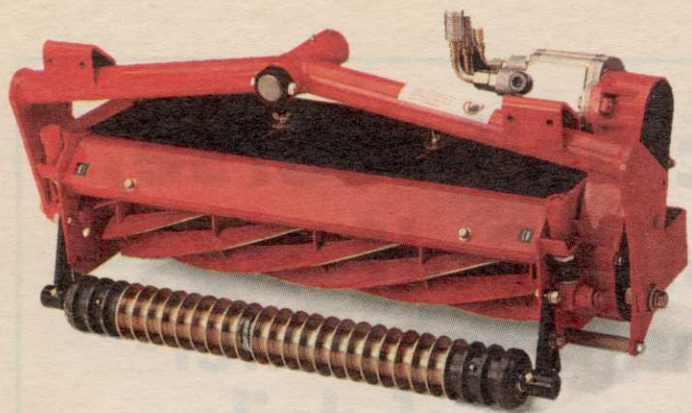
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