

GOLF COURSE NEWS

PREMIERE ISSUE
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VOLUME 1 NUMBER 1
PREMIERE ISSUE

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Nation's eyes on board ruling

BY VERN PUTNEY

The Vermont Environmental Board is sitting on a decision that could affect golf course development nationwide.

Scientists and turfgrass professors feel the Environmental Board has slighted their expertise by rejecting the initial request for a golf course in Huntington, Vt., on the grounds pesticides used on the course would threaten groundwater used for drinking as well as a nearby stream.

As the board ponders the developer's

latest appeal in the case, more upset and worry are being aired in the golf course industry and science community.

"Does Vermont know something we don't?" asks Dr. Richard Cooper of the University of Massachusetts' Department of Plant and Soil Sciences. His comment is echoed by other scientists.

At the heart of the debate is the 4-year-old effort of Paul Truax and Vermont partners to build an 18-hole golf course as the forerunner of a planned \$22 million resort

that would embrace luxury condominiums, hotel, conference center, theater, sports center and chapel in Huntington.

The board, which Nov. 9 again rejected Truax' application to develop the course adjacent to the Sherman Hollow Inc., ski resort, met Jan. 11 at Williston to consider an appeal. Because of probable lengthy review, a decision isn't due until Feb. 7.

That ruling isn't expected to be the last word.

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Dr. Michael Hurdzan, right, and Trivial Pursuit inventor Chris Haney look over land that Hurdzan is designing into an 18-hole course, called Devil's Pulpit, in Caledon Village, Ontario, Canada. See story on Hurdzan and his look at building affordable golf courses on pages 20 and 21.

Insurance spreading nationwide

BY MARK LESLIE

A veteran employee self-assuredly working with heavy equipment after so many years on the job, gets lackadaisical and a mower blade slashes off his index finger.

An inexperienced lady golfer hops onto a golf cart and promptly puts the vehicle into reverse instead of forward, pinning the caddy master behind her against a wall and breaking his leg.

A spectator at a golf tournament is hit in the head by a ball and returns the favor by suing both the club and the volunteer who was running the tournament.

In mishaps like these two parties can get badly hurt - the individual physically and the golf course in the wallet.

Physical danger seems to be inherent any time you combine machinery and people. The combination personifies Murphy's Law: "Anything that can go wrong will go wrong."

But by the end of this year golf courses throughout the country will be able to pro-
Continued on Page 33

Hyundai eyes cart market

Giant hopes to make splash

BY MARK LESLIE

Giant Korean manufacturer Hyundai Corp. U.S.A. expects to be selling golf carts in the United States by the second quarter of this year, according to a company official.

S.S. Cho, senior manager for development at Hyundai's Ft. Lee, N.J., headquarters, said only the legal procedure for permission to import the carts to the United States is holding up production.

Cho, who is in charge of the golf cart project, said the "internal procedure is going
Continued on Page 26



Green Section's Bill Bengyfield

Builders cite USGA section

The Golf Course Builders of America will honor the USGA Green Section Saturday, Feb. 11, for its "pioneering work in turfgrass research and management."

The GCBA will present the Green Section with its annual award at its banquet at 8 p.m. at the Anaheim (Calif.) Marriott Hotel, during the 60th annual International Golf Course Conference and Show.

Marion Farmer of Los Angeles, former chairman of the USGA Executive Committee's Green Section, will accept the award on behalf of the USGA. But Farmer passed on accolades to Green Section National
Continued on Page 24

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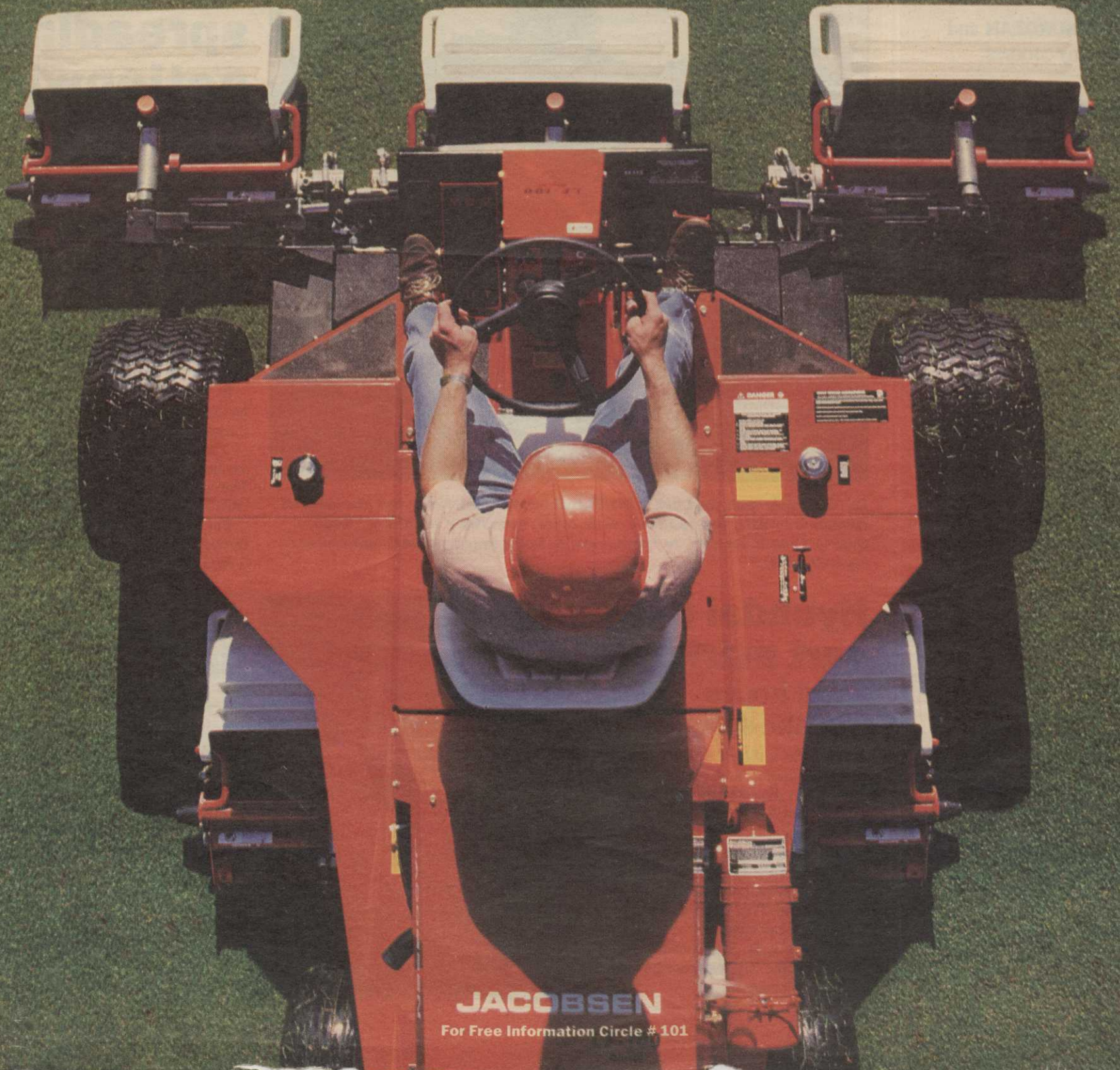
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For Free Information Circle # 101

GOLF COURSE NEWS

Letter from the Publisher

Welcome to the premier issue of Golf Course News.

The concept of Golf Course News comes from Mr. Ted Gordon. No stranger to the publishing business, Ted founded Gordon Publishing in the late 1950s, built it to 35 titles across many trade categories and recently sold it to the Dutch firm Elsevier.

Ted's involvement in golf also is extensive. He has served as greens chairman, club president and on various boards and golf committees. (He also is a strong five hand-capper.)

Recently, Ted participated in the redesign of the Rio Mar Golf Club in Vero Beach, Fla. There he realized the need for a publication that would serve the industry with timely information on golf course design, development and maintenance, in an easy-reading format. Golf Course News is the answer to that need.

Managing editor Mark Leslie and associate editor Vern Putney have shown a remarkable feel for the business early in the development of our publication. You will see their interest and enthusiasm

as you read this premier issue.

Our plan to serve the industry is an aggressive one. Golf Course News will reach a minimum of 20,000 readers each month beginning in April, and plans call for an increase to 20 issues (approximately every other week) in 1990. Golf Course News readers will be like yourself - superintendents, architects, builders and developers, greens chairmen, club presidents, and general managers.

If you're interested in receiving Golf Course News, simply fill out the card which will pop out at you a

few pages back. You'll receive the first issue to be mailed mid-April.

Our goal at Golf Course News is simple: to serve our readers with fast-breaking industry news and to provide the decision-makers at all golf facilities in the country, as well as builders and developers.

The bottom line is to serve the industry for the betterment of the game. If we can accomplish our goal, Golf Course News will be a factor in the growth of this great sport.

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For Free Information Circle #102

Gearing up for a major tournament

BY VERN PUTNEY

While PGA Tour players sharpen their games in Hawaii after stops in California and Arizona, course superintendents at the next six sites are preparing welcome mats studded with stroke hazards.

The city of San Diego again hosts the Shearson Lehman Hutton Open on Feb. 16-19 at the 36-hole public course of Torrey Pines Golf Club in LaJolla, while superintendents work ahead to prepare the famed "Blue Monster" course at Doral Country Club in Miami, Eagle Trace CC in Coral Springs, Fla., Bay Hill Club and Lodge in Orlando, Fla., Sawgrass at Ponte Vedra, Fla., and English Turn Golf Course in New Orleans, La.

Torrey Pines, tailored to the blue-collar trade to the tune of 200,000 rounds annually, dons its whitest dress and brightest green for television.

SD's golf jewel will feature sand much lighter than usually seen on camera, varying beautifully in texture and color.

Bunkers that hadn't been sharply defined for perhaps 20 years will be so modified, pruned and trimmed by course superintendent John Walter that there will be no need to delay play while a PGA official is summoned to rule on possible grounds relief.

Much Bermuda grass was sown in the summer and permitted to grow unmolested. Otherwise, rough wouldn't be the prescribed height.

It's been difficult for Walter's staff of 16 to work around the crowds swarming the courses daily. The tourist season, which began after Christmas, lasts nine months.

However, tournament preparation began in November with gradual greens shaving. By tourney time, especially top-dressed and verti-cut greens will become smooth putting surfaces in the 9.5-10 stimpmeter range.

Perennial rye grass, which Vincent says is "great filler grass and gets greener and prettier," will decorate green collars and avoid the appearance of clumpiness.

Four days before the two practice rounds, the 7,000-yard South course and the 6,600-

yard North layout will be closed to public play. Final grooming will take place.

A few hours after national showcasing at Torrey Pines, the course again will belong to those in the workaday world.

The Honda Classic at Eagle Trace on March 2-5 again looms as a test of Man against Wind. Superintendent Jeff Haley and assistant Ron Wright can't stay the high-velocity breeze hurtling down from the Everglades to the unprotected west and northwest, but they will have done their course homework.

Eight tons of rye grass has been deposited in the rough. "It's a little shaggy now, but hopefully fun to play," observes Haley.

Greens have been overseeded with rye grass, fairways have received the greens mower treatment, employees added to shag divots, traps hand-raked, especially greenside banks, tees groomed and protected at the tips and par-three tees given special attention.

The driving range, which covers about a half-acre, is ready to take a frightful beating from the practice-conscious field.

The Tournament of Players Championship's "island" 17th, the PGA Tour's picture hole in Jacksonville, will rivet the attention of the television public on March 16-19. At maximum 145 yards, it has spelled heartbreak for many a title contender. With the green entirely guarded by water, the gripping test of nerves frequently ends in fatal fascination as a challenger's ball sinks from sight.

A new spectator setup just behind the green will provide a closeup view of disaster, hairbreadth escapes and, possibly, cup-rattling shots.

All greens have been changed from bent to turfgrass. Ryegrass on all fairways will improve color and playability. Twenty tons of fertilizer have been deposited in the winter fertilization program as crews work around 150 to 200 players daily.

Course superintendent Fred Klauk hopes Florida's ideal winter weather holds. He spent three blustery seasons at Eagle Trace. His last two years at Sawgrass have been on

PGA keeping supers busy

The PGA Tour schedule includes several tournaments planned during the next two months. They follow:

Feb. 2-5 — Nissan Los Angeles Open — Riviera CC, 1250 Capri Drive, Pacific Palisades, Calif.

Feb. 9-12 — Hawaiian Open, Waialae CC, 4997 Kahala Ave., Honolulu, Hawaii 96816.

Feb. 16-19 — Shearson Lehman Hutton Open, Torrey Pines GC, 11480 Torrey Pines, LaJolla, Calif. 92037

Feb. 23-26 — Doral Ryder Open, Doral CC, 4400 NW 87th Ave., Miami, Fla. March 2-5 — Honda Classic, TPC at Eagle Trace, 1111 Eagle Trace Blvd., Coral Springs, Fla. 33065

March 9-12 — The Nestle

Invitational, Bay Hill Club & Lodge, 9000 Bay Hill Blvd., Orlando, Fla. 32819

March 16-19 — The Players Championship, TPC at Sawgrass, 103 TPC Blvd., Ponte Vedra, Fla. 32082

March 23-26 — USF&G Classic, English Turn G&CC, One Clubhouse Drive, New Orleans, La. 70131

March 30-April 2 — Independent Insurance Agent Open, Tournament Players Course at The Woodlands, 1730 S. Millbend Dr., The Woodlands, Texas 77380

April 6-9 — The Masters, Augusta, Ga., National GC.

April 6-9 — Deposit Guaranty Golf Classic, Hattiesburg CC, Country Club Way, Hattiesburg, Miss. 39401

the wet side, but minus strong winds.

Unlike most superintendents who must scramble and step up their manpower to fine-tune their layouts, Steve Kuhn has things pretty much in place for the Doral Ryder Open., Feb. 23-26.

That's because the "Blue Monster," one of five under the Doral umbrella, as a resort course can be maintained year-round as a championship test.

Members and guests electing to tee it up there accept the challenge — close-cropped fairways, deep rough, fast greens.

More refinements will be made after PGA officials and Kuhn huddle, notably a transitional 7-foot-wide 1 1/4-inch collar cut between the half-inch fairway trim and the 2 1/2- to 3-inch rough. Basically, though, course personnel will remain the same — nine workers for each course, an in-house operation again expected to proceed smoothly.

Not that Kuhn is waiting until early February to prepare. He began an orderly tournament program in mid-December with painting and general sprucing up.

Overseeding the greens with bent grass was a prime project. "The pros consider

greens and the putting game the most important part of tourney play," said Kuhn. "They prefer fast greens, and we will oblige. They're the best players in the world, and we intend to maintain demanding conditions."

Last year, green speed measured 10.3 on the stimpmeter. It will be about the same this time.

Kuhn began checking greens speed early in January. They'll start "high-high," about 5/16 of an inch, and dip to tourney standards in 1/64-inch increments.

So, while PGA officials set heights of green and rough, pin and bleacher locations, Kuhn and crews will handle remaining details.

"Actually, non-grass activity demands almost as much attention," noted Kuhn. "For instance, erection of a 'tent village' on the par-five 18th hole of the Red course. This sprawling complex accommodates corporate sponsors at \$25,000 a whack."

Then seven miles of rope must be placed to keep spectators from roaming into player territory and possibly running into a stray or sprayed shot.

Also, a 40- by 10-foot scoreboard is put in place in a pond to the side of the 18th fairway. A diver anchors this scoreboard so that CBS cameras can focus immediately on the latest scores.

At many tourneys, Boy Scouts and/or volunteer crews assist with divot replacement, trash collection and similar menial but important details.

For Kuhn and company, it remains a do-it-yourself project. About 300 receptacles are placed strategically.

Such independence is perhaps a reflection of Kuhn's background. Dad Joe, long a pro-super at Princeton Elks CC, W. Va., would don boots and work jeans at 6 a.m., get the maintenance crew started, and about 9 a.m. reappear in the pro shop in more formal shirt, slacks and white buck shoes. After a day of lessons would come dinner. Then it was back to the back of the pro shop, where he and son Steve, initially little bigger than a golf bag, cleaned clubs until 11 p.m.

English Turn's television debut March 23-26 at the USF&G Classic will be fascinating, declares superintendent Mitchell Wilkerson, because of its different look.

"This course was built for tourney play and will have length-type eye appeal," said Wilkerson. Two hundred palm trees have been planted.

Pros who have checked out English Turn like the layout. Mike Shea, PGA Tour official who played there with Wilkerson last November, added his stamp of approval.

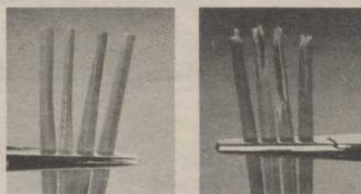
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GCSAA's Lyon has worldwide view

Asian, European and British greenkeepers are organized and are in touch

BY VERN PUTNEY

One major focus of the new administration of the Golf Course Superintendents Association of America will be "additional emphasis in the international market," according to Dennis Lyon.

Lyon, who will take over the GCSAA presidency from John A. Segui at its 60th International Golf Course Conference and Show at Anaheim, Calif., added, "We are the best at what we do, and what we do best is provide the world with outstanding golf courses."

Lyon oversees four public courses for the city of Aurora, Colo.

While looking abroad to provide GCSAA expertise and exchange information with interested Japanese and European course superintendents and developers, Lyon is most mindful of continuing and expanding the "many current positive things" domestically.

These include, he said, keeping on track successful programs dealing with education, conferences and seminars, public relations, and relations with allied groups such as the United States Golf Association, PGA of America, National Golf Foundation, American Society of Golf Course Architects, and club managers.

"An area I feel is especially important," Lyon said, "is our government relations program. We must work in concert with the federal government where appropriate in the areas of pesticide and related environmental issues."

"I have a concern that, all too frequently, federal bureaus provide notice of hearings or meetings on subjects vital to our business, and we don't react quickly to furnish timely input. If we are not astute enough to recognize this opportunity, our industry can lose out. It's up to us to take the initiative."

Aware of government's increasing role in environmental matters, GCSAA has retained the Washington, D.C., consulting firm of Myers and White to keep it abreast of lawmaking trends. GCSAA, though not in the lobbying field, could proffer advice that could help legislators make decisions, Lyon said.

Another association step forward in the environmental field is the agreement reached recently with Hall-Kimbrall Environmental Services of Lawrence, Kan.

Hall-Kimbrall has designed a self-audit package to assure a course's compliance with health and environmental laws. It was drafted specifically for golf courses and is being field-tested and fine-tuned with the assistance of William Roberts. Roberts, GCSAA board of directors member and chairman of its government relations committee, is course superintendent at Lochmoor Club in Grosse Pointe Woods, Mich.

Lyon is eyeing overseas in both directions for membership cooperation internationally. "We look forward to working with our

counterparts in other parts of the world," he said.

In that connection, he points out the probability of "sizable" attendance at Anaheim by Japanese forces. A turf conference sponsored by Toro Co. was held in Osaka, Japan, last October.

Japan's GCSAA members are a mere dozen, half affiliates. These numbers are expected to climb.

European interest in GCSAA

"We must work in concert with the federal government where appropriate in the areas of pesticide and related environmental issues."

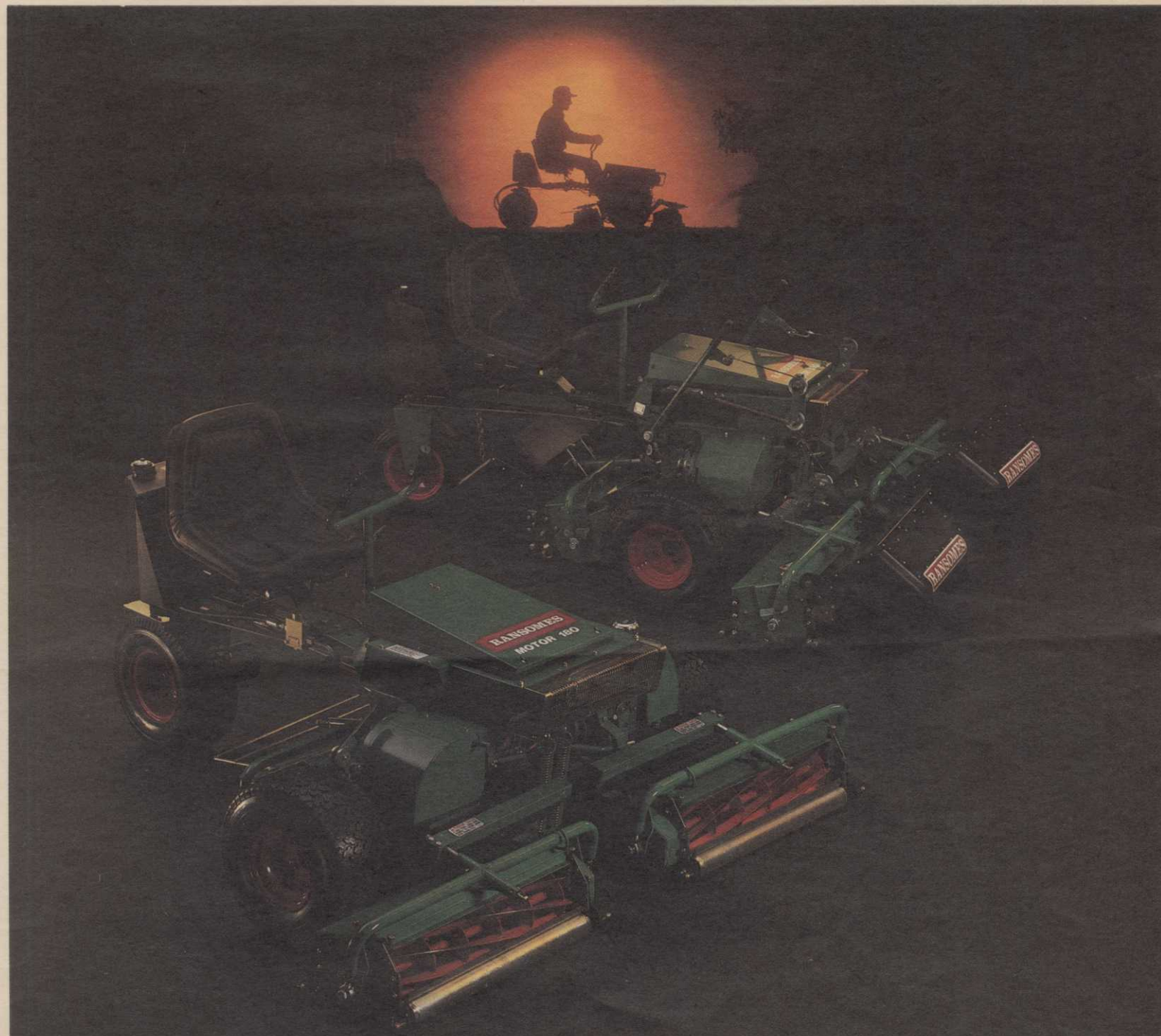
also has risen. The recently formed British International Golf Greenkeepers Association lists 2,000 members. Many are looking to the United States for close working ties.

Lyon's route to the top spot in GCSAA stemmed as much from early interest in plants as in golf courses. He noted that his native small town in Colorado had no golf course until he was a high school

student. Lyon majored in horticulture at Colorado State University, and looked more closely at turf management and its golf course applications.

After graduation 15 years ago, he obtained a job as assistant course superintendent at Heather Ridge Country Club in Aurora.

He earned a master's degree in management at the University of North Colorado in 1976.



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ASSOCIATION NEWS

Landscape architects elect Kubota president

Brian Kubota is the new president of the American Society of Landscape Architects (ASLA)

A partner in the design firm of Peters, Kubota and Glenn, and the ASLA's former vice president, Kubota also was invested as an ASLA Fellow at the group's recent annual meeting in Seattle, Wash.

The Hawaii native graduated from Iowa State University with a degree in architecture.

Kubota said: "While the practice of landscape architecture today is incredibly diverse, the 10,000 members of ASLA share common goals about the quality of the built and natural landscape."

Hunter leads irrigation officers

Richard E. "Dick" Hunter, a partner with Hunter Industries in San Marcos, Calif., has been installed 32nd president of the Irrigation Association, heading a new slate of officers.

The association at its recent annual meeting in Las Vegas, Nev., named new officers and honored Bart Nelson of Walla Walla, Wash., Dr. Leslie Sheffield of Lincoln, Neb., former association leader Walter D. Anderson, and Robert Williams-Freeman of Lethbridge, Alberta, Canada.

Hunter's father, Ed, founded Moist-O-Matic in 1952, and is an IA Industry Achievement Award winner.

Hunter is joined on the association's executive committee by Glenn Tribe of Portland, Ore., president-elect; Michael Sypolt, Sacramento, Calif., vice president; Robert Emmerich, Riverside, Calif., treasurer, and Bill Pogue, Riverside, past president.

R. C. "Bob" Sears is the IA's executive vice president and chief operating officer.

Board of Directors members elected were Phil LeBlanc, Sanford, Fla.; John Morgan, San Marcos; and Bart Nelson.

Nelson, president of Nelson Irrigation Corp., received the IA's Industry Achievement Award. Nelson's accomplishments include a U.S.-patented flow-control nozzle.

Nelson's grandfather, L. R. Nelson, began manufacturing innovative irrigation equipment in 1911. L. R.'s son, Russ, was president of L.R. Nelson Mfg. Co., Inc. for 20 years.

Nelson's interest in irrigation began in the late 1950s with large traveling sprinkler systems for agricultural use.

He persuaded B. F. Goodrich Co. to build long-length, high-capacity soft hose that could be dragged.

He also participated in the building of prototype traveling sprinklers, employing this type of hose which is used throughout the world today on traveling sprinkler systems and on linear self-propelled systems.

Dr. Sheffield was named IA's Man of the Year.

The award honors individuals outside the irrigation industry who have made outstanding contributions toward good irrigation practices.

Extension Farm Management specialist in the University of Nebraska-Lincoln's Department of Agricultural Economics, Sheffield has written 135 professional articles on water resources, irrigation and irrigation economics.

He is the author of the IA's "The Economic Impact of Irrigated Agriculture."

Completed in 1985, this 361-page study provides information and materials on the impact of irrigation and the irrigation industry on the economics of states and the United States and on the vital role of irrigation on a worldwide basis to help meet the food requirements of a rapidly growing world population.

Anderson was recognized for 16 years of service to the association, and was cited for bringing worldwide attention to the association among universities, federal agencies and state institutions.

Under his leadership, the Sprinkler Irrigation Association expanded to include all segments of the irrigation industry and it became the Irrigation Association. During his tenure, from 1969 to 1985, membership grew from 200 to more than 1,000.

Williams-Freeman, CID, manager of Oliver Industrial Supply's Irrigation Division, Lethbridge, received the IA's Crawford Reid Memorial Award.

The award cites those making significant achievements in the promotion of proper irrigation techniques and procedures and who have brought about major advancement of the industry outside the United States.



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For Free Information Circle # 105

Taylor to be honored

Richard S. "Dick" Taylor, editor and vice president of Golf World magazine, has been selected by the American Society of Golf Course Architects to receive its 1989 Donald Ross Award.

Taylor will receive the award at the ASGCA's annual meeting April 3 at the Pinehurst, N. C., Hotel.

ASGCA President Pete Dye said the society was honoring Taylor for his "more than 40 years of outstanding golf writing, particularly for noting the contributions the country's golf course architects have made to the game by constantly striving to provide the best possible courses for the golfing public."

Dye said Taylor understands "the problems the experienced golf course architect faces in today's



Dick Taylor

marketplace with its complex site, environmental and real estate restrictions, and he has written extensively about the knowledge and ability necessary to transform a barren piece of land into a challenging but fair test of golf.

Taylor has been editor and vice president of Golf World for 26 years. Prior to joining the golf publication, he was golf editor of the Palm Beach, Fla., Post for 14 years.

He was born in Indianapolis, Ind., attended Butler University there, was a pilot in World War II, and began his journalism career as a feature writer for the Tampa, Fla., Times.

The Ross nominee, a past president of the Golf Writers Association of America, was its secretary for seven years and a board member for 20 years. He twice won the association's writing contest in the magazine division. He also is a member of the Association of Golf Writers (Britain), and an honorary member of the Australian GWA.

In his golf writing career, Taylor has seen the world, its courses and players many times over. He is a member of the Board of Governors of Pinehurst No. 7 Club, a member of Pinehurst CC and Pine Needles Resort, which he considers his home course; Pinehurst National Golf Club; and honorary member of Ballybunion, Ireland, for his initial efforts to raise funds for the club's erosion-prevention

project; Guadalajara Country Club in Mexico, and Waitangi GC, Bay-of-Island, in New Zealand.

"This honor is the most meaningful of my life," Taylor said.

Previous award-winners include architects Robert Trent Jones and Geoffrey Cornish; journalists Herbert Warren Wind, Peter Dobereiner and Charles Price; publishers Herb and Joe Graffis; association executive Joe Dey; British association executive Gerald Micklem; agronomist Al Radko; entertainer and golf enthusiast Dinah Shore; PGA Tour Commissioner Deane Beman; and USGA Senior Executive Director Frank Hannigan.



Pete Dye

Dye envisions tackling wetlands regulations

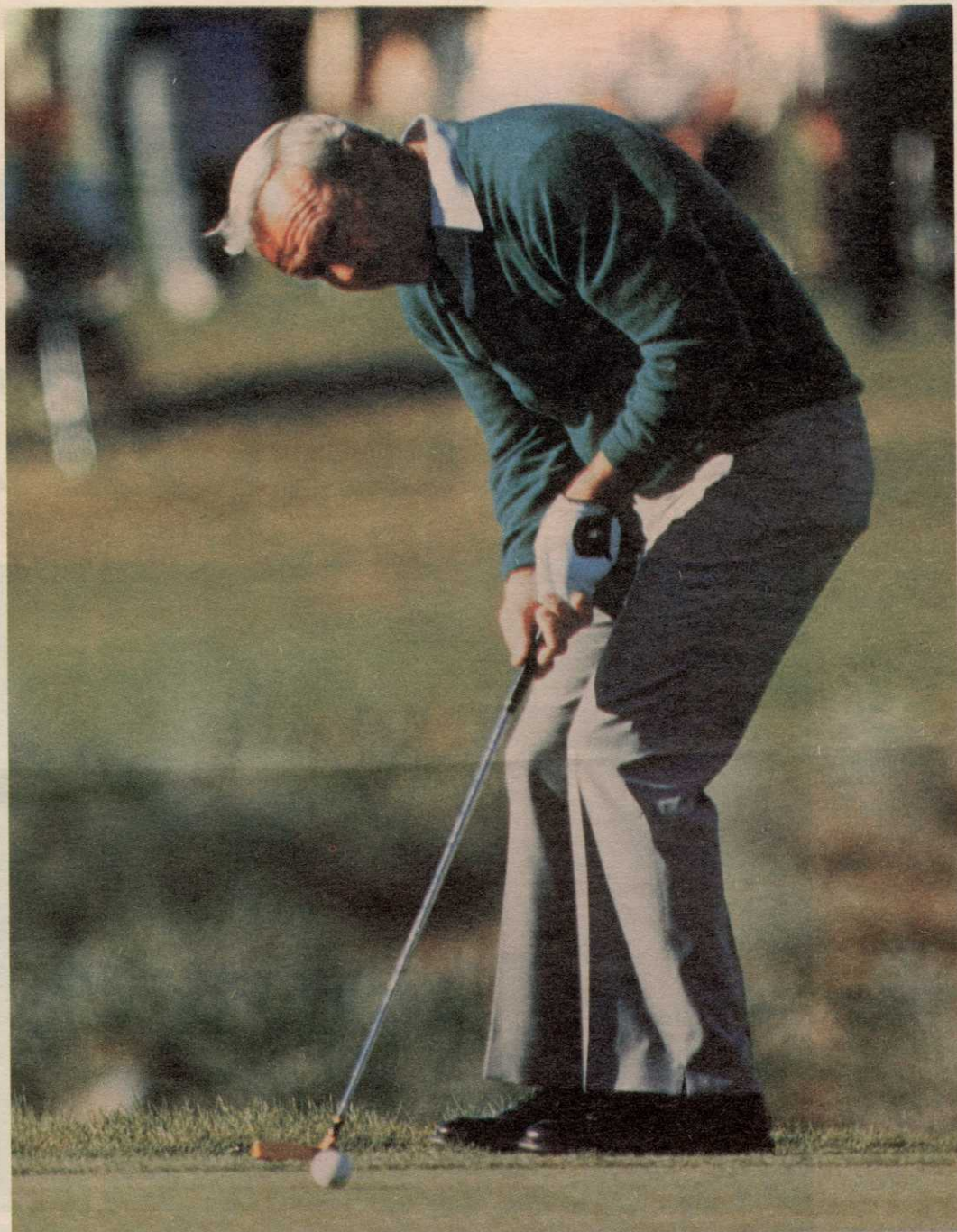
Pete Dye of Delray Beach, Fla., president of the American Society of Golf Course Architects, says the association's annual meeting in April will focus on water usage and the environmental impact on wetlands of building golf courses.

Golf course architects everywhere are being confronted with environmental regulations regarding wetlands — thought by many to be a misnomer because even hollows of land containing puddles

have been designated wetlands. The April session will educate architects how to work around the wetlands and protect them, yet still build a golf course.

In some cases, golf courses can improve wetlands, some of which are stagnant or even sewages.

Government officials will explain the regulations and how architects can deal with them and complete the permit procedure to build a course.



Here's what the professionals are saying about us.

What better endorsement could we have than that of the Arnold Palmer Golf Management Company. Their experts like our Restore[®] products so much they now recommend use on all Arnold Palmer golf courses. The results have been astounding:

- Thatch decomposition
- Decreased disease incidence, thus reduced need for fungicides
- Increased water retention
- Healthier turf, and greener, healthier plants

All from a non-burning, non-toxic, slow-releasing all-natural fertilizer. No wonder the industry's interest in us is growing!

RINGER
Welcome To Our Turf.

Architects schedule meeting

Group retains rich heritage

The Ross plaid blazer will be the colorful dominant dress at the American Society of Golf Course Architects annual meeting April 3 at the Pinehurst (N.C.) Hotel.

The blazer, symbolic of a group almost as select as the Order of the Garter, honors the family plaid of renowned golf architect Donald Ross. The "Father of Golf Architecture in America" and ASGCA founding member, Ross designed 600 courses over a 50-year career.

Although golf course architecture has been a recognized profession for more than 100 years with many distinguished practitioners, no formal organization existed until 1947. In that year, 13 charter members met in New York City.

Robert Bruce Morris, Chicago, Ill., was elected president; Donald Ross, Pinehurst, honorary president; Stanley Thomas, Toronto, Canada, vice president, and Robert Trent Jones, Montclair, N. J., secretary-treasurer. Jones is the only living founder member.

In December, 1947, Ross hosted a meeting of the new organization at Pinehurst. A constitution, by-laws and a code of ethics were adopted. Initial goals and concerns were to protect and upgrade the profession and to advance concepts and techniques of design consistent with the spirit of the game. The organization has grown in stature and numbers, expanding its interest and influence.

The ASGCA has 81 regular members (including 11 Fellows) and 13 associate members. These 93 men (and Alice Dye, Gulfstream, Fla.,) represent about 90 percent of the world's active practitioners. ASGCA qualification standards include an established ability to design representative golf courses. Applicants are reviewed regarding ethics and methods of professional practice. To be selected as an association member is peer recognition of the applicant's personal and professional integrity and abilities.

The society nominates, selects and presents annually the Donald Ross award to a member of the golf industry who has made a significant contribution to golf in general and golf course architecture specifically.

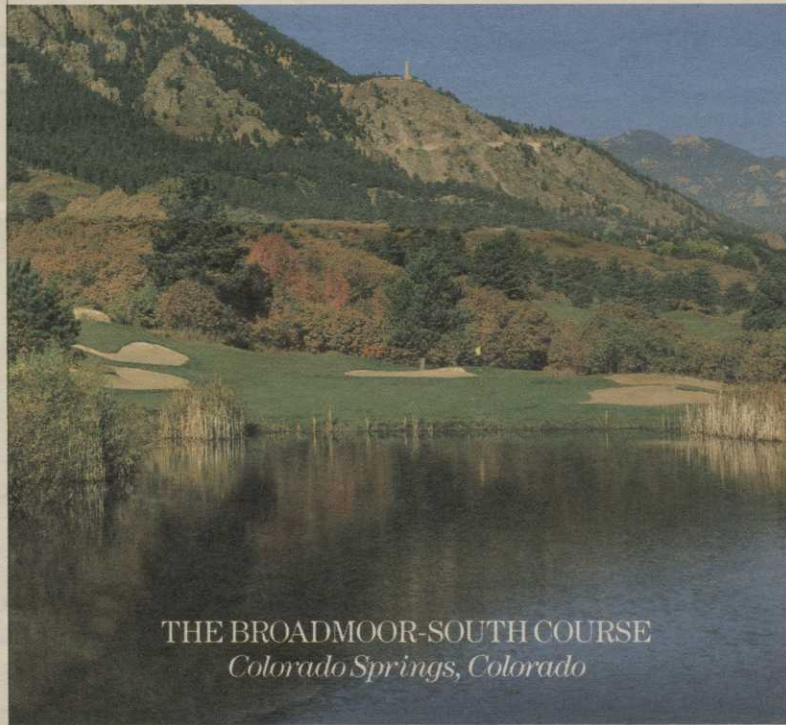
Let us know

Golf Course News is asking all of its new readers - from golf course superintendents to architects to developers, Green Committee officials, and suppliers, to send us news of your organizations. If it is organizing a meeting, has elected officers, or has released a report of any kind, please send the information to Golf Course News, P.O. Box 767, Yarmouth, Maine 04096.

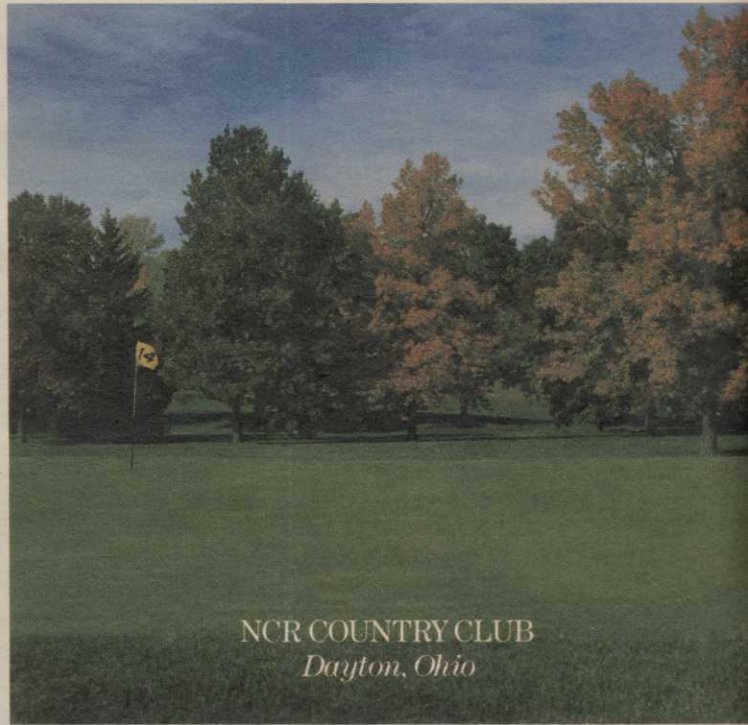


Attending the American Society of Golf Course Architects' inaugural meeting in Pinehurst, N. C., Dec. 5, 1947, were, left to right, William P. Bell, Pasadena, Calif.; Robert White, Myrtle Beach, S. C.; W. B. Langford, Chicago, Ill.; Donald J. Ross, Pinehurst, honorary president; Robert Bruce Harris, Chicago, president; Stanley Thompson, Toronto, Canada, vice president; William F. Gordon, Doylestown, Pa.; Robert Trent Jones, Montclair, N. J., secretary-treasurer; William Diddel, Carmel, Ind., and J. B. McGovern, Wynnewood, Pa. Other charter members were Perry Maxwell, Ardmore, Okla.; Jack Daray, Chicago, and Robert F. "Red" Lawrence, Boca Raton, Fla. Ross and McGovern were hosts.

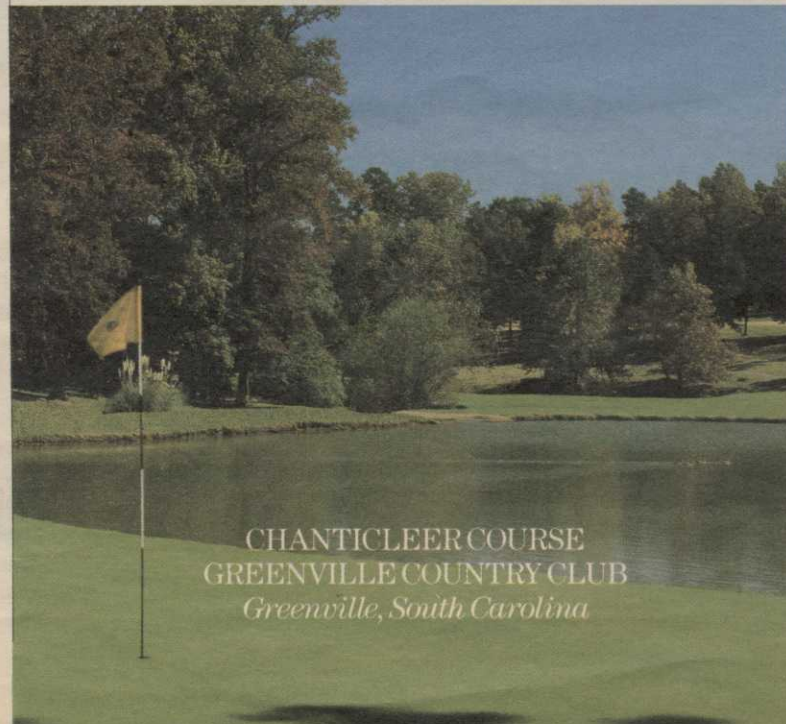
We have our product



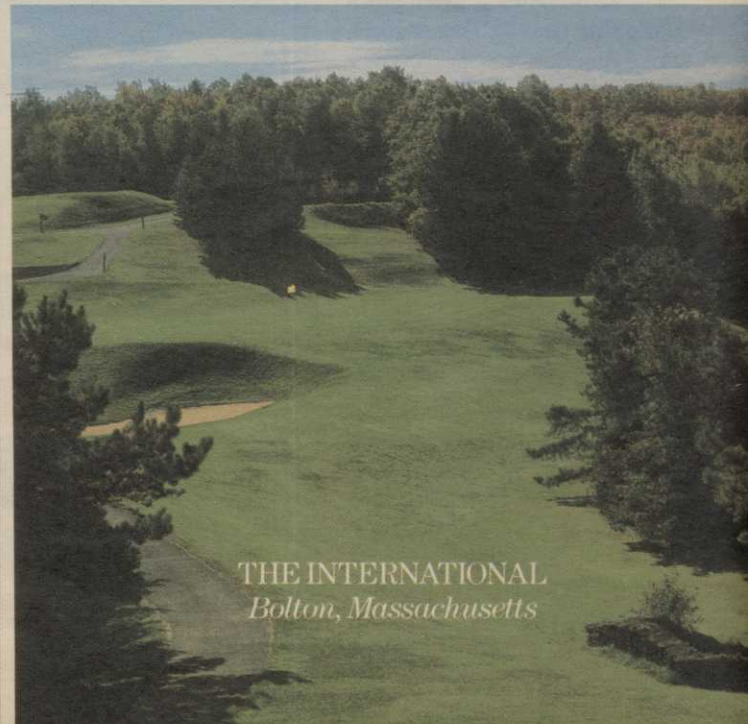
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THE INTERNATIONAL
Bolton, Massachusetts

The President's Super Secret Security proves a super's nightmare

ON THE LINKS

If you think he had added headaches the past eight years, pity Gregory D. Searle the next four seasons.

Searle is golf course superintendent at Cape Arundel Golf Club in Kennebunkport, Maine—the summer headquarters for avid golfer and President George Bush.

Bush, once a lefthanded-hitting first baseman at Yale University,

hits from the right side in golf and scores in the 81-89 range.

Searle and the Secret Service have taken elaborate precautions and made extensive plans to accommodate the Bush fitness and recreation program, often springing into action on short notice.

Security now must be beefed up considerably now that Bush is president. There's a lot of course

acreage to cover in satisfying security arrangements.

Cape Arundel, an 18-hole semi-private layout built around the turn of the century, boasts neither a bar nor restaurant. Its members mostly are summer residents in the Kennebunkport area. The Bushes and family have been members for years.

Searles says, "As Cape Arundel takes in a certain amount of greens

fees, just having (Bush) arriving to play golf causes a certain amount of amazement.

"The drive into the clubhouse crosses five golf holes. You can imagine the looks when an entourage of limousines, long station wagons and the like enter (about nine vehicles in all).

"Having (then vice-president) as a member who played frequently when at his Kennebunkport

residence, I came up with a 'Do's and Don'ts' list which a superintendent must have at his fingertips," Searle said.

"1. Probably most important is to make sure all equipment is fine-tuned. It's quite an experience having 10 Secret Service agents running and driving at you when to them a sound of a gunshot is heard in your direction. Make sure your turf vehicle—you supers know which one — doesn't backfire!"

"2. Leave your new puppy at home — not in your office in the maintenance facility. Seeing the president trying to get to your phone during an emergency — climbing over a box blocking the door so the dog wouldn't get out, maneuvering around — well, you know what a puppy often does before he learns to do this certain thing outside."

3. Try to schedule your monthly top-dressing on a day the president and I think all the press persons in the world won't be present. We had an overly enthusiastic worker on the top-dressing machine that day. Oh, well, Bush played and we managed the top-dressing.

"4. Spray greens in the evening. He might decide to play early in the morning, just after you've sprayed greens. It appeared he was following the sprayer around the course! Oh, goodness, why did I spray this morning!"

Searle said dealing with these sudden and unexpected situations has been interesting, adding, "I'm sure I'll add to my guidance list the next four years."

Many courses need facilities

Sports geographer Dr. John Rooney notes that although there are about 12,600 golf facilities in the United States, there are shortages in certain areas, especially in public facilities.

"Many people believe that just because a course is nearby that they have an opportunity to play," he said. "In fact, in many places...especially the South...there is little opportunity unless one joins a private club."

He targeted the southern and western regions of the nation as having the greatest opportunity for golf development...especially public facilities.

The South, he said, has the fewest golf holes per capita, particularly in rural areas.

Unique, funny: We want them

Have you had an interesting or unique experience in your work? We will print humorous and enlightening anecdotal stories — straight from the links — in future editions. Send to: Golf Course News, P.O. Box 767, Yarmouth, Maine 04096.

grounds for claims.

You've heard it before. "This stuff will get rid of your Poa annua. Blah, blah, blah, blah."

Well, Scotts TGR Poa Annua Control will help you get rid of your Poa. And we've got grounds to prove it.

Golf courses with tough Poa annua problems. And demanding superintendents. Over 2,000 courses, all over the country, are now using it successfully in their maintenance programs.

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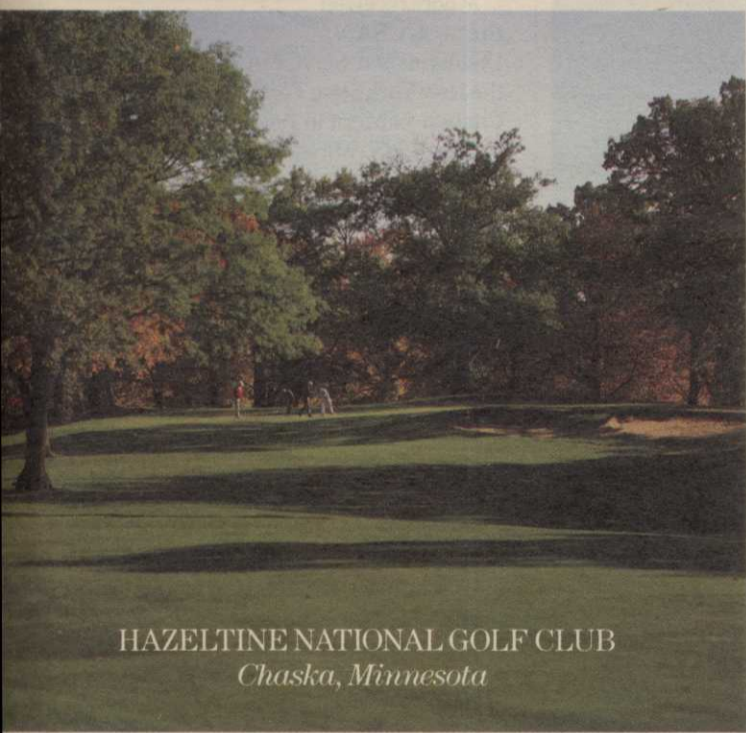
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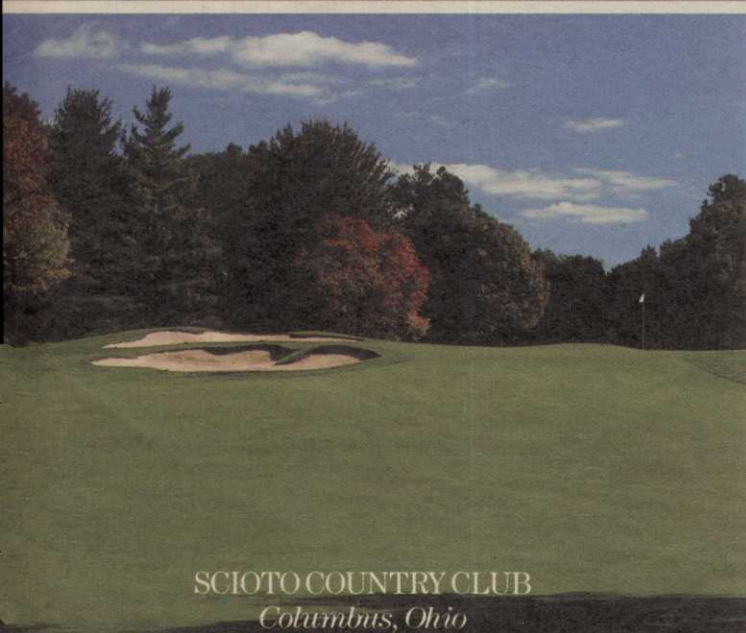
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For Free Information Circle #107

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Sherwood Moore keeps an eye on future

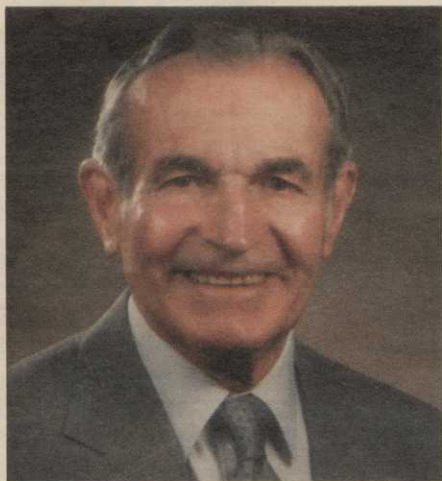
By VERN PUTNEY

Sherwood A. Moore — who already has a golf tournament and annual award named after him — will be doubly honored at the 60th International Golf Course Conference and Show Feb. 6-13 in Anaheim, Calif.

The Brewster, Mass., resident will receive a 50-year membership pin from the sponsoring Golf Course Superintendents Association of America and also be presented the Leo Feser Award for the best 1988 article by a course superintendent.

Moore's winning story, "The Wisdom of Experience," appeared in the May issue of *Golf Course Management*.

Fittingly, Moore is featured as *Golf Course News*' first Super subject — a man who has seen the time when it could take five men a



Sherwood Moore

day or two to do a green and now the time when a sit-down tractor can cut grass many times more quickly and to within 1/62nd of an inch.

Moore has written many published articles pertaining to the practical side of golf course maintenance and the profession. He also has spoken at a number of national and regional turf conferences.

Memories

Moore in a half-century of close course ties has accumulated a barrelful of memories and experiences, and has seen many industry changes.

Ants and earthworms were early problems. A drop of ant bait on greens eliminated the ants, but over-use killed the

grass. The chemical "Diworma" would irritate the worms. They would almost pop out of the ground, to be raked in piles and removed by the bucketful.

Few superintendents today have mowed greens with a push-type greensmower; or top-dressed greens by means of a wheelbarrow, shovel, rake or hand-drawn mat; or aerified greens with a foot aerifier.

Moore cites three great breakthroughs in turf management (outside of equipment): the advent of phenoxia, the pre-emergent chemicals, and the introduction of the new grasses — bents, bluegrasses and, especially, the turf-type ryegrasses.

An eye to the future

Moore believes increased computer use will be the next leap forward. He sees it as a promising new tool, one whose potential is not yet realized.

In such areas as cost-accounting, budget development and control, personnel record-keeping, chemical management and equipment, irrigation control, inventory and maintenance, computers are a must. To have all this information at one's fingertips is spectacular, Moore says.

Awards accruing to Moore for a lifetime of dedication have been numerous. GCSAA president in 1962, he's also been president of New Jersey and Metropolitan New York Golf Course Superintendents associations.

Moore received the GCSAA's Distinguished Service Award in 1982 and the New York State Turf Grass Association's Citation of Merit in 1984.

The 1985 Massachusetts Turf Grass Conference and Show was dedicated to Moore. He entered the New Jersey Turfgrass Association's Hall of Fame in 1986, and received the USGA Green Section Award in 1987.

The Metropolitan Golf Course Superintendents Association annually presents a Sherwood Moore Award, and MCSA of New Jersey conducts a golf tournament in his name.

Late bloomer

For all this, Moore could be classified as a late bloomer.

Horticulture was his chief interest when he enrolled in 1934 at the Stockbridge School of Agriculture, on the then-Massachusetts State campus in Amherst.

Love of grass and soil led him to the Greenkeeper (now Turf Management) course. Classmates were two other young men.

Fortunately, Moore's first training was at Great Barrington (Mass.) School, whose grounds included a small nine-hole golf course.

Moore hadn't caddied, so it was a new experience, one that was to become a trained eye and lead to a cartful of honors.

More practical experience followed. From 1936 to 1938, Moore was part of a course labor crew at the 27-hole Passaic County course in Totowa, N.J.

Then came his first course superintendent job, at Lake Mohawk Golf Course in Sparta, N.J. Feet firmly planted there were uprooted in 1941 by Uncle Sam. After infantry service came Air Corps duty as weather forecaster in the European Theater.

At war's end, he returned to Mohawk. *Continued on page 11*



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GOVERNMENT UPDATE

Privacy issue worries clubs across nation

The National Club Association, comprising of 1,000 private social, athletic and recreational clubs, is keeping a wary eye on efforts to deprive golf clubs of private status. The U.S. Supreme Court last year rebuffed the last threat to long-held privacy, New York City Local Law 63, which had been passed in 1984 and redefined all private clubs as public accommodations if they meet a three-pronged test.

The court held that NYC LL 63 was not unconstitutional on its face but stated that its three-pronged test is not exclusive and does not stand alone. The decision affirmed the constitutional right of free association and privacy of truly private clubs. NYC LL 63 affects only those clubs in New York City.

The NCA claims the premise of the law, is based on unsubstantiated, undocumented and false assumptions that clubs are marketplaces for making business deals and that those who want to join and can't are irreparably denied career opportunity.

Anti-club activists reportedly

Pension bill to return

The new Congress is likely to revive a bill that would have made it simpler to transfer pension benefits when changing jobs.

The bill, which was killed at the end of the 1988 congressional session, would have lifted the prohibition on direct transfers of pension plan contributions to individual retirement accounts (IRAs). That would have allowed employees to take their pension contributions with them from one job to another.

The bill (H.R. 1961) also would have allowed some direct transfers from the former employer's pension fund to the new employer's fund.

Moore

Continued from page 10

Next post was Crestmont Country Club in West Orange, N.J. Moore served 10 years at Hollywood Golf Course in Deal, N.J., before a similar stint at Winged Foot GC, in Mamaroneck, N.Y. He presided over course operations for the 1959 U. S. Open won by Billy Casper.

The West Haven, Conn., native was back in the Nutmeg State for 12 years at Woodway Country Club in Darien, then returned to Winged Foot in 1980.

After course supervision for the inaugural USGA Senior Open in 1980 and the 1984 Open won by Fuzzy Zoeller, Moore "semi-retired" to Brewster, where he oversees operations at the Captains GC, an 18-hole municipal course designed by Geoffrey Cornish and Brian Silva.

He also has helped the USGA in its Green Section turf advisory service and, to keep his green thumb active, works in a nursery.

have said golf clubs are their next target.

The NCA asserts that "the right to be left alone and to freely choose those individuals with whom we wish to associate is fundamental to the freedom and independence of every individual and private group of individuals, including private golf club members."

Golf college ups enrollment

The American Golf Corp.'s American Golf College, a one-week course of instruction that scored well in its November debut at corporate office headquarters in Santa Monica, Calif., will be expanded in an early-February session.

The college, created for introductory training of superintendents and general managers and continued training of present personnel, drew 20 AGC employees with a wide scope of ages and golf backgrounds.

AGC will enroll more people in its new session.

Fran Adams of AGC foresees an increasing role for women in the sport.

Several in the predominantly male enrollment were golf professionals.

They gained further insight into shop management and sales technique.

AGC board Chairman David Price and President Bob Williams were keynote speakers.

While recognizing that men now are most prominent in the golf field, Fran Adams of AGC's Human Resources Department foresees an increasing role for women in the sport.

She cited the number of women entering the game and their expertise in the field of fashion.

Shop sales emphasis now is as much on clothing as on golf clubs and balls, she said.

American Golf, which owns or leases 109 private and public golf courses nationwide, includes many women in golf management roles.

One look tells you. A golf course just doesn't reach this level of beauty and playability without effective control of turf diseases.

Like large brown patch. When tees, greens and fairways come under its attack, things can get u-g-l-y.

Unless you attack back—with Rubigan, tank-mixed with a contact fungicide (Daconil 2787®, Chipco® 26019, or a thiram product).

This adds even more knock-down power to Rubigan's extended disease control. Just one application can clean out even a heavy presence of brown patch for 10-14 days.

One Rubigan treatment also can

keep your course dollar spotless—up to 28 days. One case of Rubigan will treat up to 4 acres of greens and fairways. It gives you powerful preventive action against anthracnose too.

This year, make Rubigan your foundation fungicide. Find out how quickly large brown patch and 13 other common turfgrass diseases find themselves overmatched. See your Elanco distributor. Or call toll-free:

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Extends brown patch control up to seven days when tank-mixed with a contact fungicide.

Brown patch is no match for a Rubigan® tank mix.



For Free Information Circle # 109

Developers watching Vt. ban

Continued from page 1

Huntington Selectman Reginald Hathorn, gaveled into silence by Jan S. Eastman of Peacham, who chaired the two previous meetings at which five of the nine Environmental Board members unanimously ruled against the Sherman Hollow project, couldn't be denied expression outside the meeting site.

Carpenter Hathorn hammered away at what he termed the board's "shotgun approach" and "running scared" philosophy regarding pesticides. "Too many give lip service to the benefits attending golf courses, then oppose on questionable grounds," declared Hathorn.

Stopped "just short of being escorted from the meeting" by the embattled Eastman after slamming to the table a packet of envelopes containing pro-project petitions from Huntington residents, Hathorn later lamented "lack of board courtesy" in not permitting townspeople's feelings to be made known.

"We're not going to sit back and await a decision. We're going to set in motion legal machinery, and bring our case to the attention of state legislators," said Hathorn.

He said, "The Huntington Zoning Board of which I was a member debated the local permit extensively and at times hotly. Nine public hearings involving an average of seven-member panels consumed 50 hours.

"Somehow, Sherman Hollow is being equated with a nuclear waste site, rather than a golf course, a facility seen in the rest of the country as a land benefit."

"The February ruling won't be the closing chapter," observed Hathorn. "This is an unfolding story. We realize that, because the board has taken such an arbitrary and inflexible posture, it will be difficult to grant a permit. And attorneys may tread lightly around what we believe to be the board's blatantly biased position.

"Any reasonable group poring over the reams of evidence would come to the same conclusion."

Eastman, who several times at the Jan. 11 meeting warned against disturbing the proceedings, maintained that the board had stipulated that additional evidence not be allowed. Board members felt developers couldn't prove the project would not harm the environment.

"The board makes decisions on the basis of evidence presented to it," Eastman pointed out.

Board members had been under mounting pressure from Vermont's general public, Huntington residents and golf course superintendents and architects to reconsider.

Truax terms the ruling "dangerous to the golf course industry nationwide."

"Ours was an exhaustive attempt at safeguards. If the wealth of

scientific evidence and support we submitted can be ignored, what can happen to planned course expansion in the rest of the country?" he asked.

Declaring that "the future of golf in Vermont is at stake," members of the Vermont Golf Course Superintendents Association met Nov. 28 and voiced strong association backing for the Sherman Hollow project.

The District 4 Environmental Commission originally rejected

"If the wealth of scientific evidence ... we submitted can be ignored, what can happen to planned course expansion in the rest of the country?"

— Paul Truax

the golf course project in October 1987. The Environmental Board concurred. The Environmental Commission and the board considered the proposal under Act 250, the state's main development-control law.

The debate spilled over into the political arena. While not questioning the integrity of Gov. Madeline Kunin, Truax termed her administration "anti-growth and anti-development." Truax added that had the board made known its

Continued on page 13

Management termed crucial

Jim Colbert, president of Colbert Enterprises, stresses the importance of quality managers to the success of golf courses.

"We must provide them all the management tools and make it easy for them. But this game is a management game. You can take a facility that's losing money, bring in the same amount of revenue, improve the quality dramatically, and make a profit strictly through management expertise."

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WARRANTY.

Kwik-Trench signs pact

Kwik-Trench Ditch Digger of Lehigh Acres, Fla., will distribute 100 trench diggers in Japan.

Kwik-Trench President Terry Riley said the agreement with Itoman and Co. of Tokyo could be renewed every year with a minimum of 100 orders.

Itoman is a Japanese conglomerate with one of its main businesses in exporting and importing. The company has offices in about 50 countries.

Vermont

Continued from page 12

decision before Election Day, it would have cost Kunin votes among the many favoring the golf course.

"Coincidence" was the governor's office's explanation that the decision was announced the day after the election.

"The board believes the golf course will have an adverse effect during its construction phase, possibly also during its operation," the panel's opinion said. "The pastoral, quiet valley will

"I am sure that proper pesticide use on golf courses will have no detrimental effect on the quality of groundwater."

— Prof. Karl Deubert

experience a huge upheaval. The very existence of the golf course will change the whole context of the peaceful rural-residential

neighborhood."

The board based that opinion on "the need for a two-year logging operation to clear land for the course and the huge increase in traffic the course would bring."

Truax contends logging time actually would be four months.

Town backs course

Town selectmen don't think that's bad. They've urged Truax not to give up the battle, stressing that the project's

strong economic base is the only hope of a community long-depressed economically.

Townpeople apparently feel the same way. A poll taken after the course was turned down indicated up to 80-percent project approval. Those undecided or not greatly interested were among the remaining 20 percent.

A citizens' group formed to urge that the ruling be rescinded has swelled in numbers.

This core hopes to counter another organization, the Vermont Public Interest Research Group, which praised the board "for recognizing that water supplies must be protected."

The board said Truax' application failed to include important information such as what chemicals would be used on the course, or a detailed study of the flow of the groundwater.

"The knowledge of the effects of chemicals is constantly evolving and changing, and pesticides once deemed safe have turned out to be highly toxic," the board said.

Truax says the board wanted an absolute guarantee of no risk from chemicals. "No one can provide that," Truax asserts. "With our team of experts, we can assure minimal risk."

"Ironically, our approach to environmental issues has become a model for others planning courses outside Vermont," Truax said.

Palmer cautious

Truax' troubles haven't gone unnoticed by other developers. Pat McGinnity of the Ringer Corp. in Minneapolis, Minn., is working with the Arnold Palmer Management Group planning an 18-hole private course in Vermont's Windham County. Located between the towns of Stratton and Jamaica, it's now to be called Tamarack rather than Salmon Hole.

"We're preparing a comprehensive pesticide program featuring turf management and embracing maximum precaution and land use compatibility," said McGinnity. "Our presentation to the Environmental Board will be cautious and complete."

Vermont's golf course tug-of-war has been felt in other parts of the United States. According to Truax, several unsubstantiated statements have surfaced in the national media regarding the Sherman Hollow decision and some have rejoiced in rejection. Opponents of golf courses, on grounds of pesticide fear, are seizing the moment, Truax claims.

But leading authorities in the scientific field say there should be no worry about the pesticides.

Dr. Stuart Cohen, chemist and pesticide expert formerly with the Environmental Protection Agency, testified before the District 4 Environmental Commission on behalf of Sherman Hollow. His findings were adopted and approved by the Massachusetts

Continued on page 14

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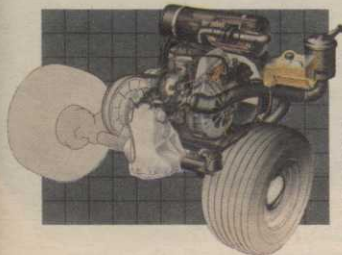


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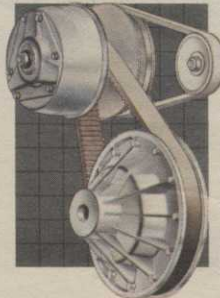
Our newly designed gas engine powers you over hills with ease on any course.

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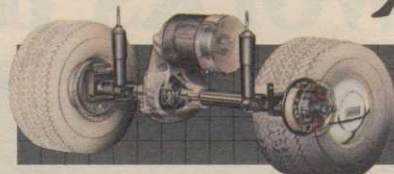


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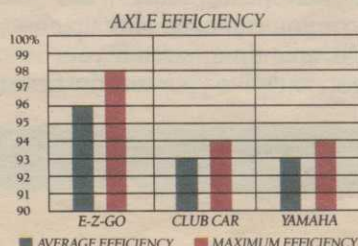
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vertical cylinder for a cooler running, well-lubricated engine. Another new feature is E-Z-GO's exclusive sliding ramp design ground speed governor that contains vehicle speed going down hills and gives a smoother, more powerful ride going up hills.

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For Free Information Circle #110

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Vermont

Continued from page 13

Department of Environmental Quality Engineering.

Karl H. Deubert, a UMass professor based at the Cranberry Experiment Station in East Wareham, Mass., said: "I am sure that proper pesticide use on golf courses will have no detrimental effect on the quality of groundwater."

"Most pesticide residues in groundwater were found in the 0.01 and 1.0 ppb (parts per billion) range," he said.

Deubert used the postage stamp to illustrate the difference between ppm and ppb. "A one-cent stamp is 7/8 inch wide. One million of these stamps would form a line a little under 14 miles long. Accordingly, one billion of these stamps would form a line almost 14,000 miles long. One part per billion (ppb) would then be equivalent to one one-cent stamp roughly between Boston and New Zealand."

Deubert said, "The reason for excitement about these residue levels is difficult to understand when we may find, in most areas where chlorination is used, up to 1,000 times more chloroform in drinking water (83 ppb being the U.S. average) than pesticide residues where they are detectable."

Unprecedented action

Michael J. O'Connor of Vergennes, environmental chairman, director and past president of the Vermont Golf Course Superintendents, termed the Nov. 9 decision "unprecedented."

O'Connor serves on a subcommittee formed to gather data and form recommendations for the Vermont Pesticide Advisory Council, is a spokesperson for the golf course industry in Vermont, and for more than 10 years has been on the Vermont Golf Course Superintendents Association board of directors.

In a letter to Vermont golf course owners, he noted that the decision went beyond the issue of development.

He wrote: "Your superintendent is concerned with the environment. His greatest pride comes from supervising and reassuring you as owners that your facility is the type of responsible land use so many people enjoy."

"If golf courses in Vermont are to fall victim to unsubstantiated claims, and if the Environmental Commission feels some of the most authoritative experts in the turfgrass industry can be overruled, consider this:

"Golf in Vermont began because the private sector developed the golf course industry. If golf courses pose a health threat, how is it that our Northeast neighbors, and states with some of the strictest environmental laws in the country, have established a working relationship to allow sound land-use decisions to be made?"

O'Connor warned: "As owners, you should be concerned with the

political process and how it has affected your reputation within the golf industry."

Kenneth W. Pillsbury of Huntington, a semi-retired dairy farmer and former vocational agriculture teacher in Connecticut, came down hard in favor of the project.

In a Burlington Free Press guest column Nov. 29, Pillsbury wrote: "Sherman Hollow Inc. has received national recognition as having created the most comprehensive program to protect the environment of any golf course in

"It is not expected that Sherman Hollow will be a panacea for all of Huntington's economic and growth problems, but it will certainly provide the town with a more promising, a more secure future."

— Huntington resident

the United States."

Pillsbury contrasted "the glaring difference in approach" by Chittenden County Superior Court Judge Matthew Katz, who last August granted Sherman Hollow a conditional-use zoning permit, and the Environmental Board. He said Katz made an objective effort to examine how such a development would help lessen fiscal and residential development problems Huntington has experienced for many years.

Katz' decision met with cool
Continued on page 18

Walker says: Emphasize pluses

Curt Walker, executive director of the Association of Golf Course Architects of America, emphasizes the benefits of a golf course.

"You have to make the point of the economic plus that the community will derive because of a golf course and the potential developments around the golf course; the advantage of open space and green belt areas in your community," he said.

He added that using effluent for golf course irrigation and providing wildlife with a safe habitat also were advantages of golf courses.

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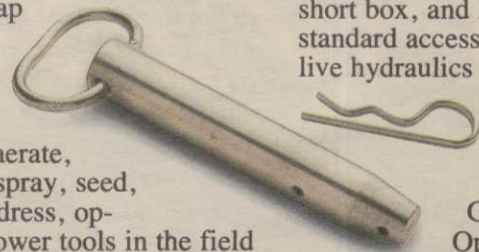
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care possible.

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Scientist: Pesticide harm overstated

University of Massachusetts Professor Karl H. Deubert, believes much of the uproar over pesticide residue is unfounded and that "proper use of pesticides on golf courses will cause no harm at all to groundwater.

"Modern analytical equipment can detect even smaller amounts" than the 0.01 to 1.0 parts per billion of pesticide residues found in groundwater, he says. "At this level, the accuracy of the quanti-

tation is questionable.

"Precautionary measures must be taken by analysts to assure that the data are qualitatively and quantitatively correct.

"Otherwise it can happen that 'pesticide residues' are detected in soil samples taken nearly 100 years ago and stored in sealed jars," he said.

"The reason for the excitement about these residue levels is difficult to understand when we may

find, in most areas where chlorination is used, up to 1,000 times more chloroform in drinking water (83 ppb U. S. average) than pesticide residues where they are detectable," Deubert says.

He said there is as little proof that these residue levels may be injurious as there is proof that they may not be.

"The word 'pesticide' conjures up all sorts of speculation called potential danger," he said. "This

does not mean that pesticides are harmless. In concentrated form, they are as toxic as any other chemical."

He said that Dr. Bruce Ames (whose Ames Test determines the potential, carcinogenic hazard of chemicals) suggested to rank carcinogenic hazards according to exposure of humans and carcinogenicity to rodents.

Based on Ames' estimates, the possible hazard of PCBs, DDT

and EDB ranks lower than that of cooked bacon, peanut butter and beer containing natural, in contrast to synthetic, carcinogens, Deubert said.

"Unfortunately, despite the absence of supporting data, the general public believes that cancer in humans is caused by synthetic chemicals, pesticides in particular," he said.

"Chemical compounds break down in the ground to simpler compounds. The breakdown process can be slow (such as with plastics and DDT), or it can be rapid (as with most modern pesticides), depending on the nature of the chemical in question. Microorganisms are primarily responsible for the degradation of pesticide residues.

Therefore, they generally break down faster in aerated, warm and most soils with a good supply of organic matter, than in cold, wet and compacted soils without vegetation. For practical purposes, breakdown takes place in and above the root zone.

"Chemicals are intercepted in their movement by soil organic matter and clay. Adsorption on organic matter can be very weak (dicambas) or strong (DDT).

It stands to reason that weakly adsorbed compounds have a better chance to move in the ground than other compounds."

"Breakdown and adsorption determine the persistence of a chemical," Deubert adds.

"Modern pesticides are less persistent (1 to 16 weeks half-life) than the older ones (up to 8 to 10 years half-life).

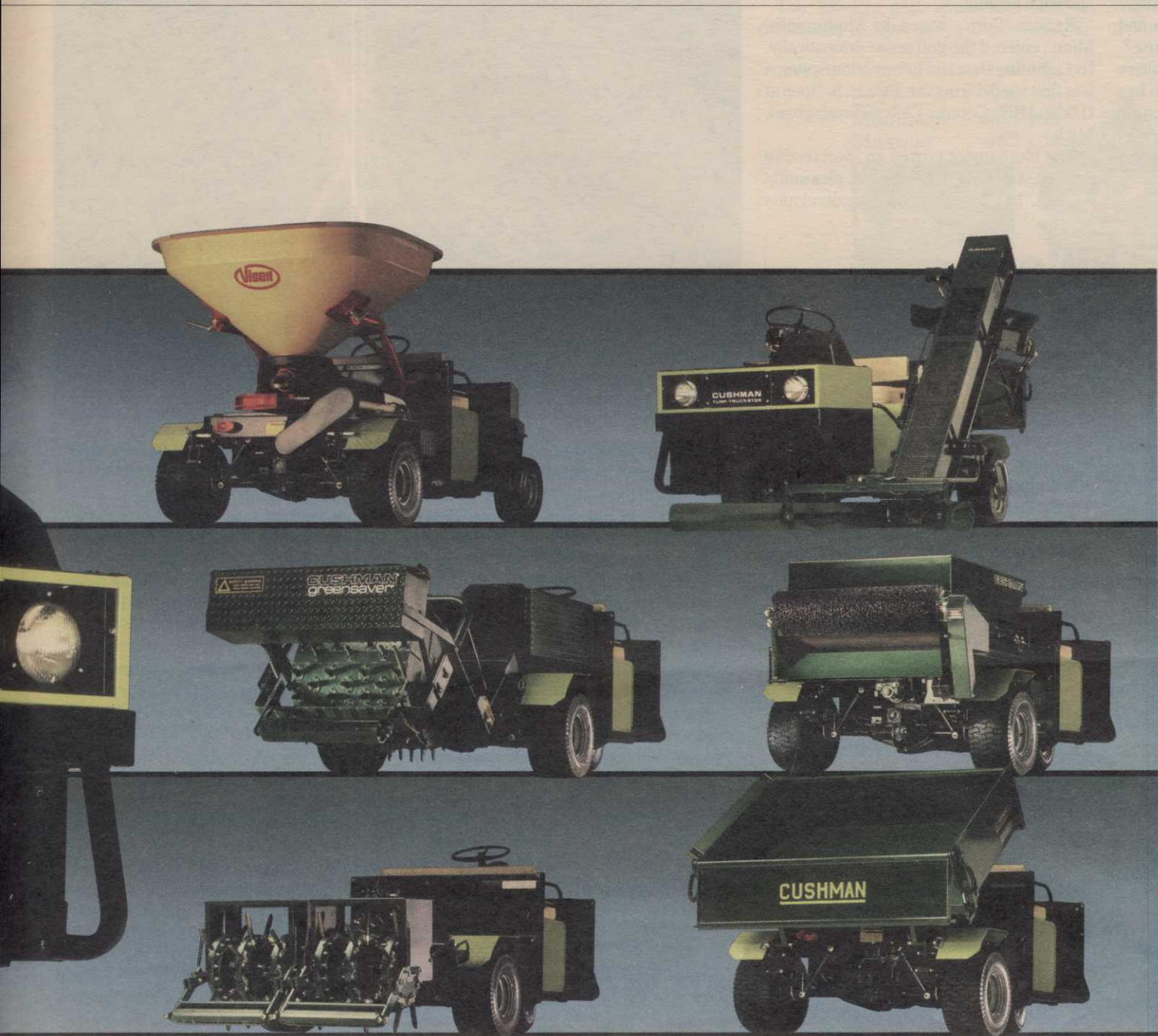
They generally break down or are intercepted by soil organic matter before they have a chance to reach the groundwater table.

"Most pesticide residues in groundwater are found in areas with intensive agricultural production," he says.

"Where chemicals are used on a large scale, the root mass is relatively small, and where the groundwater is shallow, contamination may occur.

"To reduce the risk of groundwater contamination, one should use the right chemical in recommended amounts and avoid spills. Users should keep book on any chemicals used, data, amounts, treated area (location and size), for their protection (the label is the law)."

Low spots with high groundwater table may be vulnerable to groundwater contamination, although they not necessarily have to be vulnerable," Deubert says, adding, "Unfortunately, there are no black and white situations."



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maintenance 22-hp. gas engine has plenty of stamina to pull tough loads over the long run.

A lesser turf vehicle simply won't do if you're tackling tough turf maintenance jobs thousands of hours a year, year in and year out.

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For Free Information Circle #111

Flash!

Lightning tracking makes courses safer

BY VERN PUTNEY

Superintendents, who make the "Play, Stop and Resume" decisions when lightning storms threaten events at their golf courses, can put a call in to modern technology for help.

Since Lee Trevino's highly publicized brush with a lightning bolt during the 1975 Western Open at Butler National Golf Course in Oak Brook, Ill., the danger of lightning bolts has worried players.

When is discretion the better part of valor? When should the ball be picked up and reluctant players retreat to the clubhouse?

There was a time when stubborn golfers proceeded at their own risk. The focus has changed in the last decade, strongly influenced by Trevino's searing experience. Trevino came within an ace of losing his life, and playing companions were equally endangered.

In the form of R•Scan—a comprehensive satellite system for tracking and communicating cloud-to-ground lightning strokes—science and modern technology have come to the rescue, both for golfers and course operators.

With the advent of television and the big bucks it brought to tournaments, came the added need to know the weather in advance.

An early-warning system not only may save lives, but could reduce insurance costs and legal liability.

R•Scan Corp., based in Minneapolis, Minn., entered the golf scene dramatically. Its Lightning Data and Information Systems was first used during the 1985 U. S. Open at Oakland Hills Country Club in Birmingham, Mich.

The tournament proved an ideal testing ground. Opening day began pleasantly enough, but by afternoon thunderclouds



Lightning's a killer

Lightning, which strikes in the United States approximately 10 million times each year, carries with it some deadly numbers. Between 100 and 200 persons are killed by lightning each year. Hundreds more are injured.

Golfers are at high risk when hazardous weather approaches because they are on unsheltered land.

Contrary to popular belief, lightning isn't always found in a rainstorm.

It usually precedes heavy rains, or often travels along the fringe of larger storms, striking areas that receive no rainfall.

Some rules on lightning safety:

- If you plan to be outdoors, check the weather forecast. Look out for increasing winds, thunderclouds and lightning.
- If a thunderstorm occurs, get inside a building or car.

- If caught outside, go to a low place (valley, ravine, etc.) so you don't stand above the landscape.

Do not stand under a tall or isolated tree.

- If caught on level ground without shelter or if you feel your hair stand on end, drop to your knees and bend forward, placing your hands on your knees. Do not lie flat on the ground.

- Get off or away from open water, tractors or other metal farm equipment, or other small metal vehicles such as golf cars, motorcycles and bikes.

- Stay away from wire fences, clotheslines, metal pipes, rails—any conducting objects.

People struck by lightning carry no electrical charge and may be handled safely. In many cases, apparently "dead" victims have been revived by CPR.

caused some uneasiness.

"Not to worry," came word from R•Scan.

By Saturday, the horizon loomed especially dark and ominous. Storm clouds were gathering swiftly. Frank Thomas, USGA technical director, repeatedly contacted Dr. Kenneth Bauer, R•Scan's vice president of operations.

"Where's the lightning?" was his nervous inquiry.

"Not within 300 miles," was the continued assurance.

Rain poured down in abundance, but the show went on. Andy North slogged through a couple of uncomfortable days for the title

and, to the immense relief of presumably worried ABC, a bundle of money was saved through no cancellation of play.

Postponing tournament windup to Monday doesn't please sponsors or soap opera fans.

R•Scan monitored the weather during routine Minnesota golf events in 1986, and during the 1987 and 1988 U. S. Amateur tournaments.

Chris Hague, course superintendent at Hazeltine National Golf Course in Chaska, Minn., says he was "real pleased" with results.

"There was early delay in sounding the 'all clear' signal, but improved technology corrected that," notes Hague. "Forecasting probability of precipitation, tornadoes and lightning is a big help."

Implementing this service on a national basis is not far off, Bauer feels. R•Scan, now operational in a quarter of the country, should blanket the United States by the end of this year.

He notes that there are 200,000 to 300,000 cloud-to-ground strokes in a busy 24-hour period. His company logged 250 strokes per minute in one Iowa county, "which is a lot of electricity."

R•Scan is only advisory to the golf course superintendent, who usually wears an alphanumeric pager (beeper) on his hip pocket, and makes the final decision on play.

Science seems to have supplanted eyeball observation on the course.

As Bauer observed, "Everybody talks about the weather. While we can't control it, we see our product as a valuable tool to minimize its hazards."

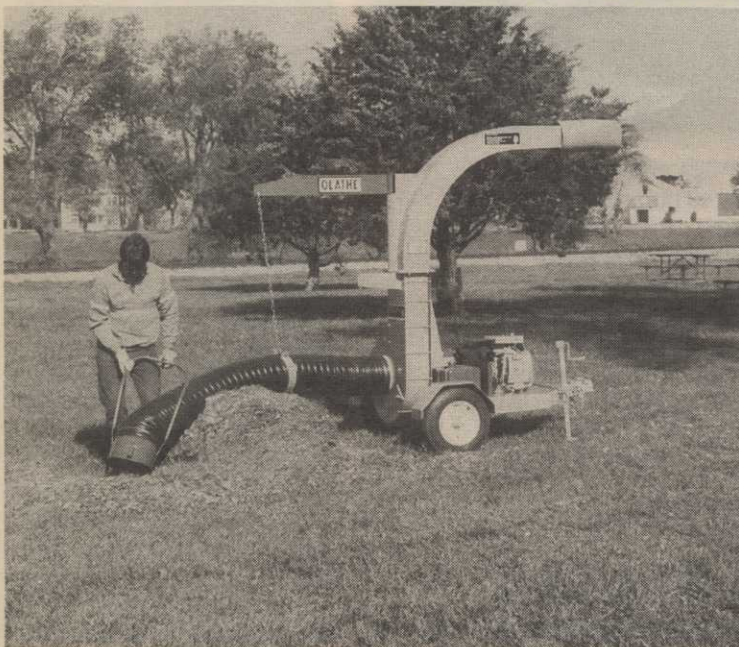
Alerting course management to fast-changing conditions can help warn against outages that could affect such things as office computers and irrigation controllers."

Trevino should rest easier now.

R•Scan Corp. offices are at Minnesota Supercomputer Center, 1200 Washington Ave., South Minneapolis, Minn. 55415-1258.

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For Free Information Circle #112



Harbour Ridge's 11th hole shows Pete and P.B. Dye handiwork in Stuart, Fla.

NEW COURSES

Pete, P.B. Dye join forces

River Ridge, a new 18-hole par 72 championship golf course, designed by the father-son team of Pete and P. B. Dye, has opened for play at Harbour Ridge, Stuart, Fla. It was the second course designed by the two Dyes that has opened recently — the other being the Cypress course at Palm Beach Polo and Country Club in West Palm Beach, Fla.

The 885-acre golf, tennis and boating community at River Ridge also is home to

Golden Marsh, Joe Lee's 6,297-yard championship layout the American Society of Golf Course Architects recently named one of the six best courses built in Florida since 1962.

River Ridge is 6,212 yards long, and is a perfect complement to Golden Marsh, according to developer John Dodge.

The new Cypress course is a championship test for both low- and high-handicap golfers.

Architects kept busy

The famed Firestone Country Club complex in Akron, Ohio, soon will sport another 18 holes for a 54-hole total.

Architects are Geoffrey S. Cornish and Brian M. Silva, Amherst, Mass.

Cornish and Silva also have these courses under construction either as new layouts or additions: Fiddlers Elbow Country Club in Far Hills, N.J.; The Dashnaw GC, Peru, N.Y.; Norton (Mass.) CC; Bradford (Mass.) CC; The Links of Amherst, Amherst, N.H.; Plausawa Valley CC, Pembroke, N.H.; Naticook Landing, Litchfield, N.H.; Perry Hollow Municipal GC; Bethel (Maine) Inn and CC; Bridgton Highlands GC, Bridgton, Maine, and Sable Oaks GC, South Portland, Maine.

Fiddlers Elbow, Norton, Plausawa Valley, Bangor and Bridgton Highlands are nine-hole additions. Norton lists semi-private status, Plausawa Valley is a private member club, Bridgton Highlands daily fee and resort.

Bradford and Naticook Landing will be 18 holes semi-private, while the Links of Amherst will be nine hole executive daily fee; Naticook Landing 18 hole semi-private; Shattuck Inn 18 hole daily fee; Perry Hollow 27 hole daily fee; Sable Oaks 18 hole daily fee

and resort, and Dashnaw 18 hole daily fee.

Byrd building anew

Willard C. Byrd and Associates of Atlanta, Ga., list three new courses: The Southland GC in Tucker, Ga.; Sea Trail Golf Links, Sunset Beach, N.C., and Indigo Creek GC, Myrtle Beach, S.C.

The Southland will be 18 holes and private. Sea Trail and Indigo Creek 18 holes and resort daily fees.

Griffiths has five sites

Denis Griffiths and Associates, Inc. of Norcross, Ga., will provide three new U. S. courses in 1989, plus one in Georgia and one in Japan in 1990.

Chateau Elan GC in Braselton, Ga., is scheduled to open in July as an 18-hole par 71 Golf Digest teaching facility. An additional nine holes are planned. Southside GC in San Antonio, Texas, with 18 holes and par 72, lists a November opening and the Chi Chi Rodriguez Youth Foundation GC in Clearwater, Fla., will list 18 holes and par 69.

Veterans State Park GC in Cordele, Ga., will be a par 72 18-hole setup in 1990, and Sasakami Cayman Golf Park an 18-hole resort course in Sasakami, Japan.

Golf courses part of Lake Nona project

Lake Nona Golf Club and Estate, a large planned urban development in Orlando, Florida, plans over the next 25 years to build a nearly self-contained community, with residential areas, resort hotels, additional recreational amenities — including more 18-hole golf courses — shopping parks and offices.

Lake Nona features an 18-room guest lodge, 40,000-square-foot full-service club-

house and Tom Fazio-designed championship course.

It will contain about 350 residential units — including golf villas, luxury townhouses and single-family and estate homes.

Tennis, swimming, boating and fishing facilities will be added.

Lake Nona officials say it is attracting avid golfers with annual incomes in excess of \$500,000 and a net worth of \$3 million plus.

Let Golf Course News, ASGCA know

Beginning with this first issue, Golf Course News — in cooperation with the American Society of Golf Course Architects — will publish news stories on new golf courses being built in the United States.

ASGCA Executive Secretary Paul Fullmer has endorsed the effort and Golf Course News already has received responses from some architects. But the ASGCA and GCN staffs hope for a comprehensive, all-inclusive list of new courses for the information of GCN readers, who include architects, developers and builders, superintendents and suppliers.

Fullmer and Golf Course News are asking people who are planning or have be-

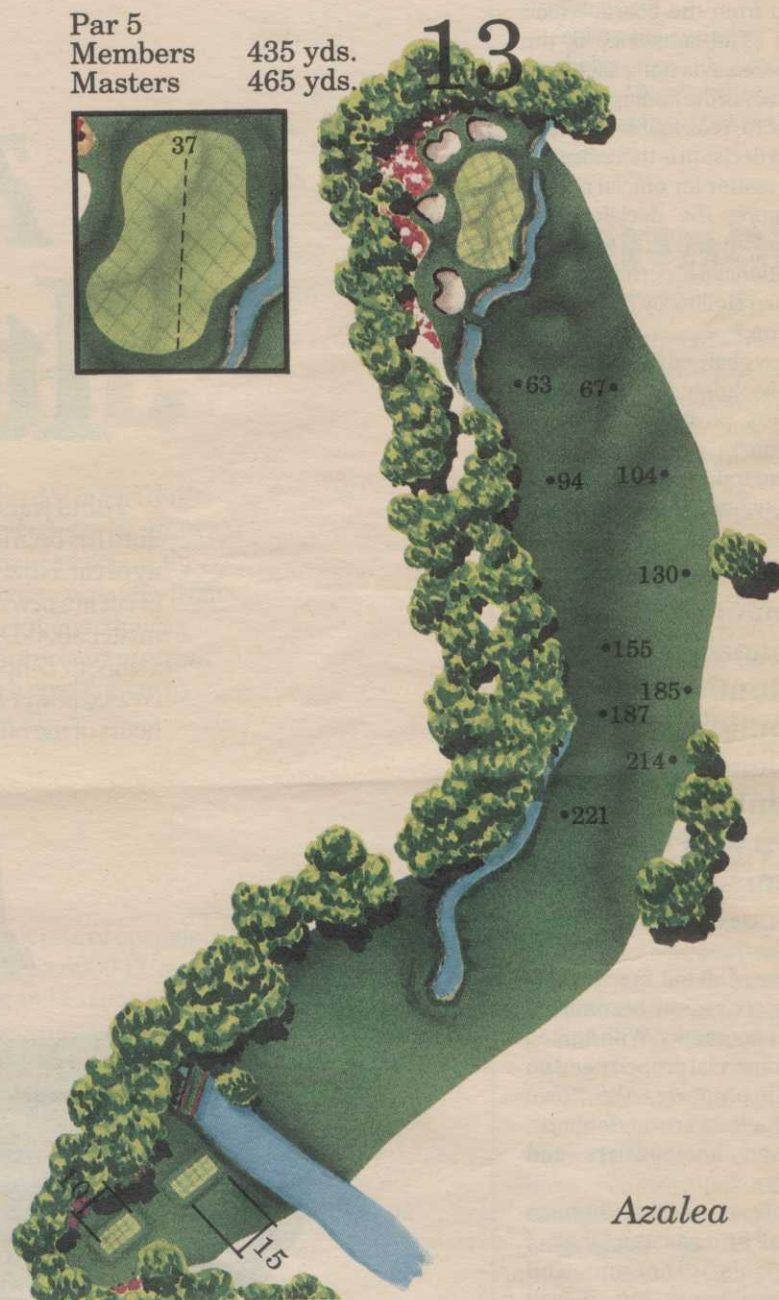
gun construction of new courses, or rebuilding or expanding existing ones, to write to the newspaper.

Golf Course News is particularly interested in:

- The city and state of the course.
- The owner, builder and architect.
- The number of holes and total yards.
- Whether the course is private, daily fee or municipal.
- The target date for completion.
- The type of terrain or any outstanding features of the layout of the course.
- Any other information that might interest the reader.

Send to: Golf Course News, Box 767, Yarmouth, Maine 04096.

Par 5
Members 435 yds.
Masters 465 yds.



GOLFAX, Ltd., the Ponte Vedra, FL based producer of award winning course guides to many of golf's finest facilities, produced this illustration for Golf World's issue "previewing" the Masters® at Augusta National Golf Club. Notice the topographic flow depicted in conjunction with the laser distancing. For members, guests, and spectators, the guide is available at the Pro Shop.

The exclusive graphic and laser techniques allow the player to accurately determine his lie in relationship to the flag and select the best club. We also coordinate our course guides with a line of signage to complement the work of the course architect and the team operating the facility.

Our Club Recruitment Group division also provides a direct link between facilities and the professional ranks of superintendents and PGA members.

GOLFAX can be contacted at 800/888-0903 and at P.O. Box 1173, Ponte Vedra, FL 32082. Prices and samples are provided by contacting Whit McClelland at the above.

Storage tank law takes effect

Underground storage tanks (USTs) must meet new requirements.

The EPA has set financial responsibility standards for owners and operators of buried petroleum and chemical tanks.

Owners and operators must

ensure that they can cover costs of any leaks from USTs.

Costs might include clean-up, damage correction and compensation of third parties for personal and property loss.

Golf course owners and operators must show "financial

assurance" in the form of at least \$1 million in aggregate funds and another \$500,000 for each tank.

Although the financial rules become effective early in 1989, full compliance will be phased in over a two-year period for smaller businesses.

Wiren says people should learn history, lore

Dr. Gary Wiren, author of a new PGA of America instruction manual, highlights the importance of knowing the history and lore of golf as well as the instructional aspects of the game.

"Those who seem to appreciate golf the most and who do so over a lifetime are the ones who not only play the game but also have been immersed in the game's lore."

This knowledge, combined with

quality instruction, he added, helps make the game more enjoyable. Dr. Wiren challenged PGA professionals to use their skills toward making golf an enjoyable experience.



PestCaster new name

Neogen Corp. has renamed its "PestCaster" to "EnviroCaster," says President Jim Herbert.

The EnviroCaster has been installed in rapidly increasing numbers of golf courses, farms and orchards around the world.

When equipped with appropriate sensors, the field-installed system can monitor, record and evaluate air temperatures, rainfall, degree days, dewpoint, leaf wetness, relative humidity, soil temperatures, solar intensity, wind direction and wind speed.

Vermont

Continued from page 15

reception from the board, which rebutted: "The substance of the court's decision is not a 'fact,' and the accuracy of the findings therein is subject to 'reasonable dispute.' The court decision is therefore not a proper matter for official notice. Furthermore, the decision was reached in the context of an appeal of a conditional-use permit granted to Sherman Hollow by the town of Huntington."

Pillsbury charged the board with giving "absolutely no recognition of the very positive benefits to Huntington."

"Huntington is not an affluent community," he pointed out. "With

"It is not expected that Sherman Hollow will be a panacea for all of Huntington's economic and growth problems, but it will certainly provide the town with a more promising, a more secure future."

the demise of all but five working farms, we are rapidly becoming a bedroom community. With limited small commercial property and no industrial property, the town depends for its tax revenue almost entirely on homeowners and landowners.

"It is not expected that Sherman Hollow will be a panacea for all of Huntington's economic and growth problems, but it will certainly provide the town with a more promising, a more secure future than without it," Pillsbury concluded.

The Free Press was far more restrained in a Nov. 30 editorial, declaring that rejection was based entirely on technical pollution issues. The Free Press maintained there was no evidence to support charges that Gov. Kunin was somehow interfering with the board to get an "anti-growth" decision.

Some Vermonters feel six golf courses in the greater Burlington area are sufficient. West Bolton, Essex and Wolf Run are within a 15-minute ride.

This outlook apparently doesn't
Continued on page 19

After Runnin It Was Time To

For 18 years, the Greensmaster® 3000 from Toro has been delivering an unsurpassed quality of cut. Now you can get that same quality of cut in a new diesel model, the Greensmaster 3000-D. The 3000-D is designed with a smooth 17 hp, liquid-cooled diesel engine for increased power and durability. Just what you need for long hours of use on greens, aprons or even fairways.



Toro's 5, 8 and 11 bladed cutting units in combination with an optional variable speed kit help make this precision cutting possible by allowing you to select a consistent ground speed while maintaining a constant, even clip.



A "Quick up - Quick down" adjustment on the cutting unit lets you raise or lower the grooming reel without losing the depth setting. Depth adjustment is easy too. No tools are needed.



Courses' environmental self-audit kit ready

An exciting step into the future of golf course management will be unveiled during the International Golf Course Conference and Show at Anaheim, Calif.

William Rogers will detail an environmental self-auditing package that will be made available to golf course superintendents.

It has been designed to help courses keep pace and comply with expanding scrutiny by governmental environmental boards and regulations.

Roberts, course superintendent at Lochmoor Club in Grosse Pointe Woods, Mich., and a member of the Golf Course Superintendents Association of America's board of directors, has been field-testing this kit for project sponsors GCSAA and Hall-Kimbrell Environmental Services.

Hall-Kimbrell, whose corporate offices are near GCSAA's national headquarters in Lawrence, Kan., has evaluated, designed and managed projects at more than 3,000

The kit offers users a method to anticipate potential regulatory and legal liabilities

public schools and 150 colleges and universities.

Hall-Kimbrell has completed an extensive review of federal and

state regulations as they relate to golf course operations.

Outgrowth of that study is a checklist and recommendations, instructional videotape and printed materials for course evaluation.

The kit, which offers users a method to anticipate potential regulatory and legal liabilities, costs GCSAA members \$725, non-members \$900.

Upon return to Hall-Kimbrell, the self-audit is reviewed by computers through an automated re-

sponse system, the data sorted, and an analysis performed.

The project team then provides a point-by-point compliance appraisal. Results are kept confidential.

Steve Wharton, Hall-Kimbrell project manager, visited courses from Maine to California to determine the environmental problems and needs of superintendents.

Since last October, a dozen courses have been involved in the new program.

Hall-Kimbrell's booth at the Trade Show in Anaheim will provide literature explaining the program and will have a video tape presentation.

Those not ordering the kit at Anaheim may do so through GCSAA Membership Services, 1617 St. Andrews Drive, Lawrence, Kan. 66046.

g For 18 Years Add New Fuel.

More golf superintendents depend on the Greensmaster 3000 for good reason. No matter what your height of cut requirements are, the Greensmasters give you cutting versatility from as low as 3/32" up to 11/16". Exactly what you need to cut your greens to tournament standards and deliver a precision cut to aprons and tees as well.

For ease of operation, the Greensmaster 3000-D features power steering and an automotive-style steering wheel. The machine's steering arm is easily adjustable and can be moved up or down by the flip of a lever to comfortably accommodate any operator.

Precision cutting has made the Greensmaster 3000 the most popular riding greensmower in the world. And now the new Greensmaster 3000-D gives you that same quality of cut with increased power and durability. For more information on either machine call your local Toro distributor. You'll see for yourself what the world has enjoyed for years.

The grooming reel on the Greensmaster 3000 lets you easily manage individual green conditions throughout your course with tailor-made precision. Height of cut uniformity is assured through a free-floating cutting unit design that is not affected by the weight of the collection basket.

TORO

The Professionals
That Keep You Cutting

Vermont

Continued from page 18

extend to Vermont's New England neighbors. Maine lists 13 courses due for expansion or construction, New Hampshire has 10 under construction, and Massachusetts is in the market for 11.

Vermont lags with three courses due for construction or addition in 1989, and possibly three in the planning stage for 1990.

Ski resorts sparked Vermont's biggest golf course boom, in the 1960s and 1970s. New Hampshire now is following that pattern.

"Well over 200" courses are being built annually in the United States, according to figures compiled by leading golf course architect Geoffrey S. Cornish of Amherst, Mass.

Cornish adds that the current 57 Vermont courses (two of which are private) can't accommodate interested tourists, many from wealthy Westchester (N.Y.) County.

"Golfers are big spenders, in the pro shop, clubhouse and dining room. If Vermont club regulars have courses tied up in the summer, tourists must look to other states," Cornish said.

The National Golf Foundation believes 375 layouts annually will be needed by the year 2,000 to absorb the expected player surge from the current 21.7 million to 30 million.

Up-in-the-air Sherman Hollow may not get off the ground to be part of this progress.

Ann Leslie, EPA chemist who works out of Alexandria, Va., is among those disappointed at the Sherman Hollow impasse.

She had hoped to use that course as one of 10 pilot projects.

However, she said, "we need 10 existing courses. The first year or two, there usually are no pests. When they emerge, we evaluate and study how to control."

Right now, Sherman Hollow's future rests in the hands of nine beleaguered board members.

A golf course for less than \$1 million

Hurdzan says site selection crucial for economy courses, and he has proved it

BY KATHY BISSELL

At the November 1988 Golf Summit, created and chaired by the National Golf Foundation, golf's private research arm, the topic was how to assure that golf — the sport and the industry — would be as healthy in the future as it is today. One of the biggest needs facing all golfers is the demand for courses.

The National Golf Foundation (NGF) has estimated that if both the demand and the number of courses being created stay the same, the United States will have a shortage of 4,478 courses in just 12 years. If tee times are tough to get now, just wait. It'll get worse.

One reason for the shortfall is the cost of creating a new golf course. It's a cost that can easily climb into the several millions..

Today's most heralded courses, like the TPC (R) Stadium Golf (R) Course at PGA WEST — or any course by a top name designer — are expensive propositions. Joe Walsler Jr., senior vice president of Landmark Land Co. Inc., in LaQuinta, Calif., says of the construction cost at The Stadium Golf Course, "I gave (architect) Pete Dye an unlimited budget, and Pete exceeded it."

Not every golf developer is fortunate enough to have such deep pockets. But it serves as a basis of comparison for Dr.

Michael Hurdzan's stance that a golf course can still be built for around \$1 million.

To most, \$1 million sounds like a lot. After all, Jack Nicklaus has won just over \$5 million in his career.

But when it comes to building a golf course, it's bare bones. Consider, again, the PGA WEST Stadium Golf Course. Earthmoving costs were about \$1 a cubic yard. Two million cubic yards of earth were moved to create The Stadium Course. That's just earthmoving; never mind irrigation, planting, cart paths and the rest. The scope of the problem becomes more clear.

However, Hurdzan doesn't just theorize about his price. He has done it. In places like The Vineyards near Cincinnati, Ohio, which Golf Digest names as one of the best new places to play. At Crystal Highland Golf Course, near St. Louis. And at Willowhead, near Hyannis, Mass.

But there are rules to follow to create a golf course of your own on a limited budget. And as Hurdzan cautions, expectations must be balanced with reality.

Here are his guidelines:

The cost of land is not included in the \$1 million.

An 18-hole golf course needs a minimum of 150-160 acres.

Unlike agricultural needs, it doesn't have

Forum Feedback

Question to Michael Hurdzan, former President of the American Society of Golf Course Architects: What line items are you including in your \$1 million construction cost?

Response: The main categories of golf course construction budgets and unit costs are as follows:

Activity	Unit Cost	
	Low	High
1. Tree clearing, thinning, & disposal	\$1,200/ac	\$3,500/ac
2. Major drainage structures	\$1/dia"lf	\$2/dia"lf
3. Earthmoving	\$1/cy	\$3/cy
4. Minor drainage	\$2/lf	\$4/lf
5. Golf green construction	\$.50/sf	\$.60/sf
6. Irrigation	\$450/head	\$750/head
7. Pumps	\$75,000	\$200,000
8. Planting bed prep., & planting	\$1,500/ac	\$3,000/ac
9. Sand bunkers	\$1/sf	\$3/sf
10. Cart paths (8' wide)		
a. Aggregate stone	\$1/lf	\$4/lf
b. Asphalt	\$4/lf	\$12/lf
c. Cement	\$8/lf	\$16/lf
11. Bridge	\$5,000/ea	\$50,000/ea
12. Shelter houses, restrooms, etc.	\$2,500/ea	\$25,000/ea
13. Rock removal	\$5/cy	\$25/cy
14. Sodding	\$2/sy	\$6/sy
15. Landscaping	\$0	\$500,000

Abbreviations

lf = linear foot sf = square foot sy = square yard co = core cy = cubic yard

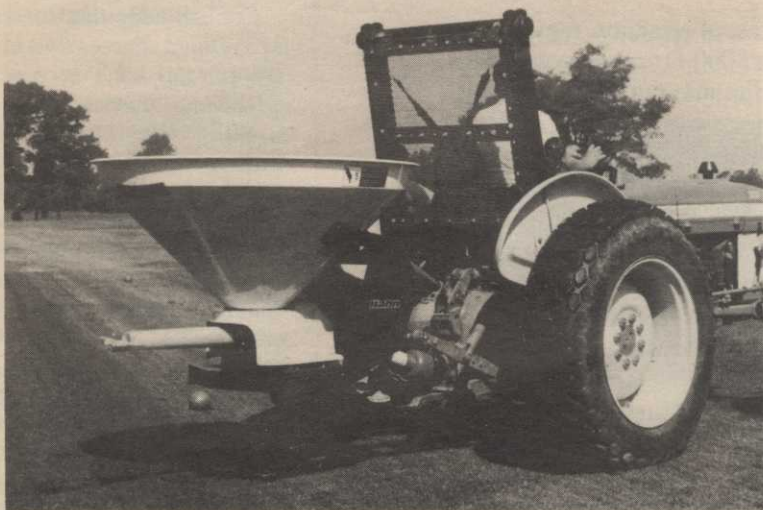
These unit costs are the same whether you are building a one million dollar golf course or a ten million dollar one. It is the quantity of each item that determines the final cost. So to keep costs low, one must keep quantities as low as practical, or get the lowest unit price.

Finally, assuming a good-to-ideal golf course site in a non-arid region, the possible construction budget aimed at achieving the highest reasonable perceived value for \$1 million might look as follows (recognizing that exact amounts may shift between activities depending upon exact site conditions):

Step	Activity	Cost	Step	Activity	Cost
1.	Mobilization of contractor	\$10,000	8.	Planning	
2.	Clearing			(120 acres @ \$2,000/ac)	\$240,000
	(40 acres @ \$2,000/ac)	\$80,000	9.	Sand bunkers	
3.	Major drainage (estimate)	\$75,000		(50 @ \$500 ea)	\$25,000
4.	Earthmoving		10.	Cart path	
	(100,000 cy @ \$2/cy)	\$200,000		(partial 5,000 lf @ \$4/lf)	\$20,000
5.	Minor drainage		11.	Shelter houses	
	(25,000 lf @ \$3/lf)	\$75,000		(2 @ \$2,000 ea)	\$4,000
6.	Greens construction		12.	Sodding around bunkers	
	(100% sand over tile)	\$75,000		(10,000 sy @ \$4/sy)	\$40,000
7.	Irrigation and pump				
	(low grade automatic)	\$250,000		TOTAL	\$1,094,000

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to be 100 percent tillable acreage. Ravines, streams, rolling landscapes that would be completely unusable for farming may make an ideal setting for a golf hole. Dye often has said that the first thing he does when he sees a piece of property is to "walk it and discover the four or five or six naturally occurring holes in the land." Then he molds the others around what Nature provided. (However, there are some who believe that Pete and Nature never have been on speaking terms.)

The land must have good drainage.

Hurdzan says, "Given a choice between a site that costs \$1,500 an acre and needs \$1,000 an acre in drainage improvements, or well-drained land that costs \$2,000 an acre, the choice should be obvious."

He also points out that costs apply to "non-arid locations," meaning that much of the western United States and popular locations such as Southern California and Arizona will not meet the criteria.

Similarly, sites in South Florida, or other locations where the water table is just below the surface of the soil, can not qualify. The costs of moving, draining and rearranging earth will not fit into the low-budget category.

"The land needs to have good surface topography," he adds, "and good water

movement. If you have 100 acres and it costs \$60,000 an acre to drain it, you have \$600,000 in drainage costs."

The land needs to have good topsoil, few obstacles — environmental and legal — and irrigation water available.

Today's golf course construction planning is not a simple matter. After land acquisition and right-of-way questions have been tackled, there remains environmental impact statements, utility questions, historical designations, zoning changes and more.

Creating a golf course takes as much land-planning expertise as building a business park or a residential community.

According to Hurdzan, "The more complicated planning or construction problems a site presents, the greater expenditure required to make the site suitable."

The shape of the land is important.

According to Hurdzan, a square or rectangular shape is ideal — almost essential — for budgetary reasons. "If the shape has jagged edges, it is difficult to fit golf holes."

Owners must come to grips with why they want to build a course.

Do they Hurdzan feature want it for real estate? For an event? As a destination? For ego? Or to make money?" Hurdzan asks.

Continued on next page



One of Michael Hurdzan's favorite holes — the par three 16th he designed in the midst of a cranberry bog at Willow Bend Country Club in Cape Cod, Massachusetts

It's important to know what you want. You look at the ground and the budget and see — if you want an Augusta National—if we can build an Augusta National. If it's not in the budget, then we figure out what we CAN do for the price. We maximize planning and minimize construction."

Move as little earth as possible and still get the result wanted.

"There is big money in earth-moving cost," Hurdzan points out. He gave a low of \$2/cubic yard and a high of \$3/cubic yard. "I'm talking 100,000 cubic yards, whereas other people might move a million."

Don't expect a lower planning fee for a lower budget course.

"We don't charge less for a low-budget course. Sometimes it takes more time — a lot more — in planning and problem-solving and time in the field than for a more expensive course. We work within the budget."

Use \$8 a round for each million spent in construction as a rule of thumb.

"If a golf course is well designed and built, you should be able to get 40,000 rounds per year out of it. At \$15 per round for fees, plus whatever you get for carts and the shop, you can probably gross a million dollars a year," Hurdzan says. "We find people have to charge \$8 a round for each million dollars of investment to break even. And these are for good golf courses. The best tribute is that The Vineyards in Cincinnati was listed as one of the best new public courses to play. And it is a million-dollar golf course."

Hurdzan's Experience

There are those who might balk at Hurdzan's ideas. However, Hurdzan has been involved in golf since he was a youngster. "I used to shag balls at Beacon Light Golf Course, where my dad was the golf professional. When I was 13, I started working for Jack Kidwell during the summer. I worked for nine summers."

In the meantime, Hurdzan also attended school, receiving a Bachelor of Science in turfgrass management at Ohio State and then his master's and Ph. D. from the University of Vermont. He started a landscape company to finish work for golf courses, but subsequently had an opportunity to become

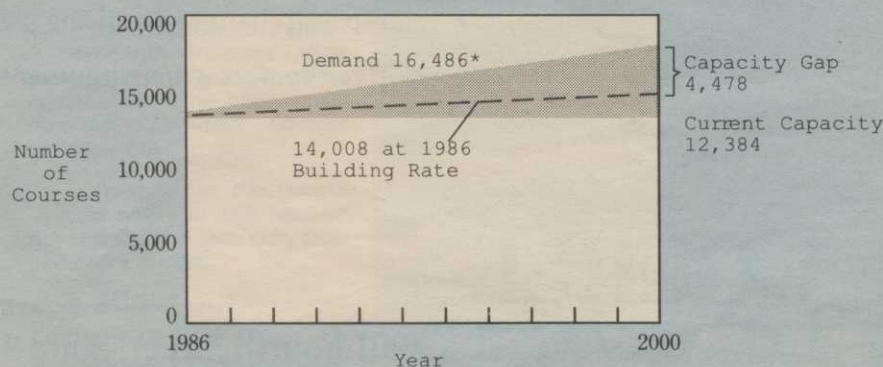
**Hurdzan Design Group
Work Completed in 1988**



Project Name	Location	# of Holes	Approx. Cost
Baker Reserve	Minn., Minn.	10	.7
Boone Links	Florence, Ky.	9	1.0
Cedar Brook	Belle Vernon, Pa.	27	—
Cliffside GC	Gallipolis, Ohio	18	—
Crystal Highland	Crystal City, Mo.	18	2.3 all amenities
Grand Oak GC	Harrison, Ind.	18	1.3 course only
Hampton Park	Hampton, Va.	27	3.0 course only
Hillcrest CC	Batesville, Ind.	9	Confidential
The Links	Cleveland, Ohio	18	1.8 course only
Renaissance Park	Charlotte, N.C.	18	—
Shamrock GC	Columbus, Ohio	18	1.1 course only
Willowbend CC	Cape Cod, Mass.	18	4.5

**CAPACITY GAP BY YEAR 2000
UNDER 2% GROWTH SCENARIO**

Number of Courses



*Projected Based on Year 2000 Participation Rates, Holding Number of Rounds Per Golfer Per Year Steady, and Keeping Annual Rounds Per Course at Today's Levels
Source: NGF McKinsey Analysis

"If a golf course is well designed and built, you should be able to get 40,000 rounds per year out of it. At \$15 per round for fees, plus whatever you get for carts and the shop, you can probably gross a million dollars a year."

--- Michael Hurdzan

Kidwell's partner in golf course design.

"Three years ago, Jack was nearing the age of 70 and sold the interest to me," Hurdzan explains.

Most Kidwell-Hurdzan business has been from city, county, state and governmental agencies, though in recent years they have seen an upswing in the private investors who want a golf course built

"About 60 percent of our work now comes from governmental agencies and 40 percent from country clubs and daily fee type courses. Of the 40 percent, probably 10-15 percent is daily fee and 10 percent is country club, with the rest housing or resort." They have 35 courses in some stage of construction at present.

"We have the strongest demand right now from daily fee, privately owned and publicly owned courses. But when the economy turns around, the private investors are gone. The government built golf courses even during the Depression. They have a recreational imperative to meet. And golf courses make money."

Hurdzan's courses stretch from Kansas to Massachusetts and from Toronto to Georgia. Most of his business falls east of the Mississippi.

"Just because we have built courses for low budgets doesn't mean it's the only kind of work we do. If you give us \$4 million, we'll build a world class golf course. Right now, we might not be famous, but we help people make money. We've been in business a long time. We try to be competitive, but we think our work compares with anybody's."

Kathy Bissell is vice president and director of public relations for Landmark Land Co., Inc.

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CALENDAR

Meetings of interest to golf course superintendents, builders, developers, architects and Greens Committee chairmen:

FEBRUARY

6-13 - 60th Annual International Golf Course Conference and Show, conducted by the Golf Course Superintendents Association of America at Anaheim, Calif., Convention Center. (See pages 28-32 for details.) *

7 - Mid-Florida Turfgrass Annual Conference at Seminole Community College, Sanford, Fla. Contact Uday R. Yadav, University of Florida Cooperative Extension Service, 250 W. County Home Road, Sanford 32773; telephone (407) 323-2500., ext. 182.

16-17 - 20th Annual International Erosion Control Association Conference &

Exposition at Pan Pacific Hotel, Vancouver, British Columbia, Canada. Contact Ben Northcutt, IECA executive director, P.O. Box 4904, Steamboat Springs, Colo. 80477; telephone (303) 879-3010.

21-23 - Western Pennsylvania Turf Conference & Trade Show at Pittsburgh Expo Mart/Radisson Hotel, Monroeville, Pa. Contact Dr. Thomas Watschke, Department of Agronomy, 405 Agricultural Administration Building, Penn State University, University Park, Pa. 16802; telephone (814) 863-1613 or Pennsylvania Turfgrass Council, P.O. Box 417, Bellefonte, Pa. 16823-0417; telephone (814) 355-8010.

MARCH

1-2 - Golf Course Renovation, Restoration and Construction Projects seminar,

conducted in Cincinnati, Ohio. *

6-7 - Golf Course Construction Techniques and Management, seminar conducted in King of Prussia, Pa. *

7 - Budgeting and Forecasting seminar.

8 - Biology of Turfgrass Soils seminar, conducted in Bozeman, Mont. *

9-10 - Insects on Turf, Trees and Shrubs: Principles of Control, seminar conducted in New Brunswick, N.J. *

13-14 - Disease Identification and Control, seminar in Brooklyn Park, Minn.

14 - USGA Green Section Conference, Chevy Chase (Md.) Country Club. Contact Jim Snow or Eric Shiel at (201) 234-2300 or Stanley Zontek (215) 696-4747.

16 - USGA Green Section Conference, Sleepy Hollow CC, Scarborough, N.Y., Contact Jim Snow or Eric Shiel at (201) 234-2300 or Stanley Zontek (215) 696-4747..

21 - USGA Green Section Conference, Oak Hill CC, Rochester, N.Y., Contact Jim Snow or Eric Shiel (201) 234-2300 or Stanley Zontek (215) 696-4747.

21 - USGA Green Section Conference, Ramkota Hotel and Conference Center,

Sioux Falls, S.D. Contact James A. Farrell, P.O. Box 616, Crystal Lake, Ill. 60014; (815) 459-5590.

20-21 - Introduction to Soil Science seminar, conducted in Sioux City, Iowa. *

23-24 - Plant Nutrition and Fertilizers seminar, conducted in Milwaukee, Wis. *

28 - Golf Course Safety, Security and Risk Management seminar, conducted in St. Louis, Mo. *

29 - USGA Green Section Conference, Weston (Mass.) CC. Contact Jim Snow or Eric Shiel (201) 234-2300 or Stanley Zontek (215) 696-4747).

APRIL

1-6 - American Society of Golf Course Architects annual meeting at Pinehurst (N.C.) Hotel. (See story pages 7 and 8.)

13-14 - Plant Nutrition and Fertilizers seminar, conducted in Palm Springs, Calif. *

17 - Golf Course Safety, Security and Risk Management seminar, conducted in Washington, D.C. *

* - For more information contact GCSAA, 1617 St. Andrews Drive, Lawrence, Kan. 66046; telephone (800) 472-7878.

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VFD a cost-saving investment

Pump system already has paid off for some course supers

BY KEVIN T. KNIGHT

As supervisor of four Landmark Land golf courses in Rancho Mirage, Calif., Wayne Conrad knew a problem when he saw one and he saw a big one. Power costs for irrigating just one of the smaller courses at Mission Hills Country Club were exceeding \$100,000 annually.

"We knew that our pump station was the problem," Conrad said. "It was a really inefficient conventional system that used a pressure-reducing valve. After looking at all our options, we decided to replace it with a VFD pump system."

Unlike conventional systems that use a pressure-reducing valve, VFD (variable frequency drive) pump systems use solid-state electronics to precisely control pump motor speeds. This regulates pressure exactly, reduces maintenance, virtually eliminates line surge and harmful cycling of pump motors, and produces significant power savings.

In the first month after converting to a VFD system, Mission Hills saved \$8,000 in power costs.

In a similar situation, Indian Hills golf course near Kansas City, Kan., had an inefficient conventional system that was wasting energy and having difficulty maintaining water pressure. Since installing a new VFD system in April 1988, the course has been pumping twice as much water for 30 percent fewer kilowatt hours, said course superintendent Ed Huggins.

"With this VFD system, the pump only comes on when it registers a flow," said Huggins. "If we turn on one hose, the pump only runs fast enough to maintain pressure for that flow. If we turn on two heads, then it adjusts accordingly. Unlike our old system, this doesn't take too much water out of the main and suck it dry."

Indian Hills' Greens Chairman Jack Robison believes VFD systems are inherently more efficient than conventional alternatives.

"For quite some time I've felt that VFD pumps are the way to go for golf courses," said Robison, an industry veteran with more than 25 years experience in irrigation systems. "Unless you need a conventional system that always requires a pump's maximum output, then a VFD system, in my opinion, is the way to go."

Two companies at the forefront of VFD technology are Best Equipment of Addison, Texas, and Western Pumping Systems of Chandler, Ariz.

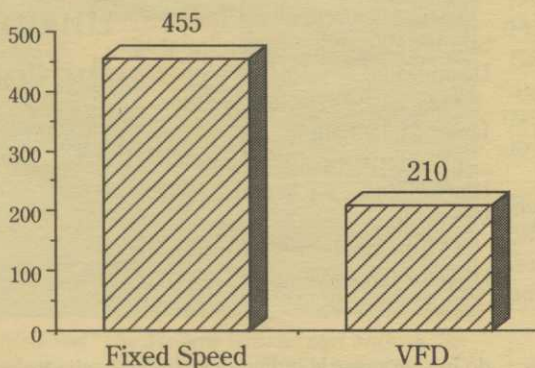
According to Dave Brockway, senior sales engineer at Best Equipment, VFD systems are the wave of the future.

"Golf course superintendents and accountants both benefit from VFD technology," Brockway said. "These systems have been shown to reduce energy costs up to 40 percent and require minimal maintenance since they're computer-controlled. In fact, a single system can be programmed to serve several different irrigation systems at one location, eliminating the need for costly, additional pump stations.

"We've also learned that if our systems are properly installed and work well from the beginning, they will hum right along, virtually problem-free."

The price to pay for those benefits can cost from 10 to 30 percent more than conventional alternatives. Yet, according to Tom Olson, pumping/agricultural representative for Southern California Edison, that cost difference can often be recovered in power

VFD Power Savings: A Case Study



A six-month study at Indian Hills County Club in Kansas showed a 54% power savings using VFD technology. True savings are much greater, however, because the new VFD pump systems has also boosted pressure 60% more than the conventional system. Data courtesy of Best Equipment, Addison, Texas

savings within six months.

"The price of these systems is coming down as demand for them goes up," Olson said. "Four years ago a VFD system cost approximately \$400 more per horsepower than a conventional system. Now they're only \$200 more expensive per horsepower. Of course, you don't have to put a VFD on every motor because there's quite a bit of flexibility in designing these systems."

Last year Southern California Edison was so impressed with the power savings VFD systems offer that the company rebated \$50 for each horsepower in a VFD system. Thus a 60-horsepower VFD system produced a \$3,000 rebate.

Some concern has been expressed that VFD systems are more difficult to service than conventional systems. While it is true that there are more technicians available for conventional systems, the proved reliability of VFD systems appears to have helped calm many fears.

"We originally thought VFD systems would be more difficult to service but when

you think about it, there's nothing really easy about servicing a conventional system," said Roger Gordon, president of Gordon's Irrigation Consulting in Laguna Hills, Calif. "I think conventional systems get out of adjustment more often. That doesn't seem to be much of a problem with this new technology.

According to Brockway of Best Equipment, golf courses that can benefit most quickly from VFD technology are those with high energy costs, high maintenance costs, variable water pressures or different irrigation requirements at one location. Brockway also advises working with a manufacturer or consultant experienced in VFD technology.

"I feel that if you go against VFD technology, it's like trying to hold back the tide," said Gordon. "People need power and cost savings right now and it's almost unpatriotic to use more than you require. I'm convinced that VFD technology provides a substantial savings, not just a small one. It's a quantum leap forward."

EQUIPMENT NEWS

E-Z-GO lists warranty

E-Z-Go Textron has announced a limited lifetime warranty for all 1989 model E-Z-Go Fleet Golf Cars.

Cars will be warranted against defects in materials and workmanship for the lifetime of the vehicle while in possession of the original purchaser.

The 1989 gasoline cars feature a new helical axle powertrain, delivering more horsepower for better hill-climbing.

A new sliding ramp-type governor senses actual ground speed to control vehicle speed.

Both electric and gasoline cars are said to provide the greatest ground clearance in the industry and an 18-foot, 6-inch turning radius.

Contact Ronald P. Skenes, communications coordinator for E-Z-Go Division of Textron, Inc., P. O. Box 388, Marvin Griffin Road, Augusta, Ga. 30913-2699; telephone (404) 798-4311.

Chipco registered

Rhone-Poulenc Ag Co. has announced EPA registration of ChipcoO@ brand 5G pesticide.

The 5-percent granular product was registered for the control of white grubs and other surface and sub-surface turfgrass pests on home lawns and on commercial turf such as golf courses.

Chipco@ Mocaps 5G also was registered for the control of chinch bugs, black turfgrass Ataenuffs beetle, blue grass billbug, sod webworm, mole crickets and nematodes.

Chipco Mocaps 5G became available in January in 50-pound bags.

Write Chipco/Specialty Products, Rhone-Poulenc Ag Co., P. O. Box 12014, Research Triangle Park, N.C. 27709.

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Green Section

Continued from page one

Director William Bengyfield, who has spearheaded the section, its staff of agronomists and its high-powered research funding mechanism since February 1982.

"The strength of an organization comes from the top and Bill has been at the top for a long time," Farmer said. "We hope he'll be doing it for a long time in the future as well. Bill is the perfect mix of knowledgeable agronomist and pragmatic goals-oriented accomplisher."

The USGA Green Section is "always pleased and proud when other organizations recognize its contributions," Farmer said. He said that while golf clubs feel the "immediate impact" of the Green Section when its agronomists visit the golf courses to offer expert help, "the results of the research come in very subtle ways; sometimes the grass seeds do a lot better and no one realizes that that is because of research done a couple of years ago through the Green Section."

Farmer said the Green Section's Turfgrass Advisory Service, which has been offered since the organization was founded in 1921, sent agronomists on more than 1,300 visits to give advice to golf superintendents in the last year.

The Green Section's massive turfgrass effort, started in 1983, will have spent almost \$3 million on 16 research projects at 12 locations by the end of this year, he said.

This research has been supported at 33 experiment stations and universities throughout the United States.

One project is being supported

Sharing the section's award

USGA Green Section National Director William Bengyfield's team who share the award from the Golf Course Builders of America include:

- Agronomist for championships: Tim Moraghan at Golf House in New Jersey.
- Northeast Region: Director James T. Snow; agronomist Jim Connolly.
- Southeastern Region:

Director Patrick O'Brien; agronomist John H. Foy.

- Mid-Atlantic Region: Director Stanley Zontek; agronomist David Oatis.
- Great Lakes Region: Director James M. Latham Jr.
- Western Region: Director Larry Gilhuly; agronomist Paul Vermeulen.
- Mid-Continent Region: Director James Moore.

in New Zealand and the Green Section has been involved in projects in the Far East and Europe.

Meanwhile, it has created a clearinghouse for turfgrass research in the computer system at Michigan State University

More than 14,000 bibliographic data references on turfgrass research and general turfgrass information is "as close as your computer," Farmer said. By calling 517-353-7209 on his computer a superintendent can tap into studies and research published the world over.

"Nowhere is this information available in one place in the entire world," Farmer said.

This is the first year the Builders Association has presented the award to an institution instead of an individual.

Golf Course Builders President Don Rossi said his organization is honoring the Green Section for "the work they have done in turf research and management and for letting the world know that golf keeps America beautiful."

"Not only have they helped individual clubs, but the research they

do into grasses is indispensable," Rossi said. "As agronomists they come in and give the superintendent a helping hand. They don't come in to find fault or order them around, but to help them.

"They're just a wonderful organization."

Rossi also hailed the Green Section for the "tremendous amount of research it sponsors at universities and the grants it gives for developing different grasses."

One major aspect of the Greens Section's research today is developing a grass that doesn't need much water — a problem last summer especially, when drought hit the midsection of the United States.

The USGA has mandated the Green Section to "assist its members in their greenkeeping problems."

It states the Green Section's purpose is "to develop and disseminate information and knowledge about turf management especially as it relates to golf courses.

"In order to accomplish this purpose the Green Section shall engage in service to members,

The Green Section's massive turfgrass effort, started in 1983, will have spent almost \$3 million on 16 research projects at 12 locations by the end of this year.

both direct and indirect; promotion and development of turf research; cooperation with the U.S. Department of Agriculture and other turf interests; encouragement and cooperation with Extension Service activities and field services; development of trained workers in turf management, and coordination of information relating to turf management."

Rossi also pointed to Bengyfield's leadership in directing the Green Section's national program and its 10 agronomists, supervising championship course preparation and editing the Greens Section Record.

Bengyfield joined the USGA staff in 1951 and served as agronomist and western director of the Green Section until 1978 when he became director of golf courses and park maintenance at Industry Hills Golf Course in Industry, Calif.

Bengyfield rejoined the USGA staff in October 1981, and in February 1982 was made national director.

Bengyfield feels much of the credit for his staff's accomplish-

ments belongs to Farmer, who was a member of the Green Section committee from 1983-87 and chaired it from 1985-87.

"Marion Farmer helped pioneer the turfgrass research the USGA has done," Bengyfield said.

He explained that Farmer was instrumental in raising more than \$3 million for Greens Section turfgrass research."

Bengyfield called the Builders Association award "a very, very wonderful distinction to receive from such an organization."

Farmer, a retired Los Angeles businessman, served on the USGA Executive Committee from 1983-87 and chaired the Green Section during that time.

Farmer is a member and past president of the Bel Air Country Club in Los Angeles and long active with the Southern California Golf Association, serving on its board of directors.

Buzz Taylor of Jupiter Hills, Fla., is the current chairman of the Green Section Committee but can not attend the banquet, which will be preceded by a 7 p.m. reception.

Hannigan joins ABC

Frank Hannigan, the USGA senior executive director for the last five years, left the organization on Feb. 4 to take a post as commentator for ABC Sports.

Assistant Executive Director David B. Fay has taken over as acting senior director.

Hannigan will write a column in the monthly Golf magazine in addition to working with ABC.

Hannigan had been on the USGA staff since 1961.

USGA President William C. Battle said the search for a replacement was being delayed until a report on the association's organizational structure is finished.

"Frank has been an ardent supporter and friend of the golf course superintendent and the GCSAA for many years," said John M. Schilling, GCSAA executive director. "His contributions to USGA and the game of golf have been outstanding.

"I'm very happy that Frank will continue to be associated with the game in the future."

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Haas rises to challenge with Mod-Sod

Golfer, inventor feels solution under foot



Fred Haas stands on his Mod-Sod "The Modern Grasse" cart path on the first hole of Arnold Palmer's Jeremy Ranch Golf Club, Salt Lake City.

By VERN PUTNEY
PGA Senior Tour veteran Fred Haas, who has had an important impact on the game of golf as a player, believes he can provide a major step in speeding up play, one of the thorniest problems course superintendents and owners face.

Haas, who at 73 is the oldest PGA Senior Tour member, except when Sam Snead decides to play, is fine-tuning the artificial turf Mod-Sod that he has patented. It could be a breakthrough in the time struggle that course operators have been wrestling with since the post-World War II playing boom.

The National Golf Foundation's latest golfer survey found that 87 percent of those questioned want to play golf more often. But 70 percent cited lack of time and 25 percent said course crowding dissuaded them.

Haas, of Metairie, La., claims his Mod-Sod can be used as parking areas near tees and greens with no course-damaging effects. Rather than the current park-and-walk practice, golfers can drive closer to the ball and not risk ranger wrath.

Haas thinks cart path philosophy must be changed. For time purposes alone, he contends, course operators should consider linking areas just off the tees to similar spaces close to the greens in as straight a line as possible. The more rounds played, the more revenue from green and cart fees.

A big advantage of the product he's been refining for more than a decade is its texture. A ball striking the surface won't bounce crazily, as it would when landing on asphalt or macadam cart paths.

"The bounce is true," said Haas, "the same as a ball hitting in the fairway or rough."

Riley Stottern, course superintendent at Jeremy Ranch Golf Course in Park City, Utah, backs Haas' bounce claim. "I talked with Arnold Palmer and Haas about Mod-Sod on a particularly tight area of our par five 16th hole," he said. "A ball hit only slightly off-line would strike the macadam cart path and head for the water. Not only would the ball likely be lost, but there would be up to a five-minute playing delay while the search went on."

"This problem no longer exists," said Stottern, past president of the Golf Course Superintendents Association of America. "We're looking at a half-dozen other places for Mod-Sod installation, as a time-saving step and perhaps avoidance of an unfair penalty shot."

Haas originally envisioned Mod-Sod as largely a substitute for greens. He's discovered a variety of practical applications around—and not confined to—the course.

For instance, the greatest time-waster with carts under the 90-degree format that most courses employ, is the practice of hewing to the edge of fairway or rough until it's time to proceed to the ball. How about pursuing a path almost "straight down the middle" from tee to green? Haas asks.

A group from Hobe Sound, Fla., recently broached the subject to Haas.

"We're mostly senior players, straight but not too long off the tee. We seldom stray from the fairway, and if we didn't have the mandatory back-and-forth car shuttle from rough to ball to rough, we could make excellent time," they reasoned.

Driving a conveniently connected line from tee parking area to green fringe, no-nonsense seniors would go around much more quickly.

The to-and-fro pattern proved almost too much for one Colorado course. When conditions are right, women can be more than a match for men in playing time. However, the combination of hugging the rough after a 150-yard shot, a 125-yard walk to the ball (a repeat process on a 400-yard hole) and another 75-yard walk back to the cart after holing out proved too taxing. Walking included scaling a few mounds. Colorado's terrain isn't the flattest.

Some women foursomes were taking almost seven hours for 18 holes, observed out-of-patience standout senior player Betty O'Brien of Denver.

That's harmful to course economic health as well as tempers.

Walkways, breezeways and coverings for wooden bridges are other fringe golf course uses.

A wooden walkway at the PGA National course at Palm Beach Gardens, Fla., from the pro shop to the putting green, four years ago was crumbling under constant contact with golf spikes. Mod-Sod was installed and, according to Haas, is holding up beautifully.

Sand traps are another area receiving close scrutiny by Haas.

"Six inches of sand atop a Mod-Sod base should do the job," declares Haas. "Sand won't be lost. New sand is terrible to play out of,

and is expensive."

Chipping areas around practice greens can take a beating and are prime Mod-Sod targets. Also on Haas' drawing board are three-hole courses for beginners and the not-too-serious player.

"Cost would be \$1 (for three holes), \$3 for nine holes," Haas said. "That would make the game affordable for the average wage earner who might have eyed golf as recreation but hesitated because of the price tag."

Gene Sarazen, former Masters champion and for a half-century prominent in game development, likes Haas' speedup concept. The Connecticut Squire thinks strategic Mod-Sod installation would lessen current exasperating times from 30 to 45 minutes.

Julius Boros, another Nutmeg State native in Sarazen's swift playing vein, backs any device that would cut course time.

Florida-based Boros long has shaken his head at the "Snowbirds," as the Northerners who flee winter's harsh grip are labeled. Their habit often is to drive the golf cart from one side of the fairway to the other. Sometimes by the time they've made it to the 16th or 17th hole, they've run out of gas.

Boros daily would place extra carts at these locations. It saved a lot of calls to the pro shop or maintenance shack and avoided the possibility of disgruntled guests trudging to the clubhouse. A more direct route from tee to green is preferable, so it's understandable that Boros would line up behind Haas' idea.

Haas feels Mod-Sod is the answer to demand by younger, stronger tournament-minded players for "Tiger Tees." This means driving from the extreme length of the course. The game's bombers like to "let out the shaft" and still have more than a half-wedge shot to the green.

Installation of a 4-by-6-foot Mod-Sod piece for \$250 would serve the "playing from the tips" purpose and would pose no maintenance problem.

While Haas' product seems to have found favor with the game's veterans and likely will be considered carefully by course

developers as golf expands, his pitch for conversion to Mod-Sod greens nationwide has brought a "Go Slow" approach.

Dr. Glenn Burton, the U. S. Department of Agriculture's research geneticist at the Coastal Plain Experiment Station, in Tiffin, Ga., is among the skeptics. He questions satisfactory use of artificial turf as greens. "It's hard to duplicate Nature," said Burton.

In his 53 years with USDA, Burton has witnessed many failed attempts to modify bent grass. He noted that, even with the climate advantage in Georgia, compared

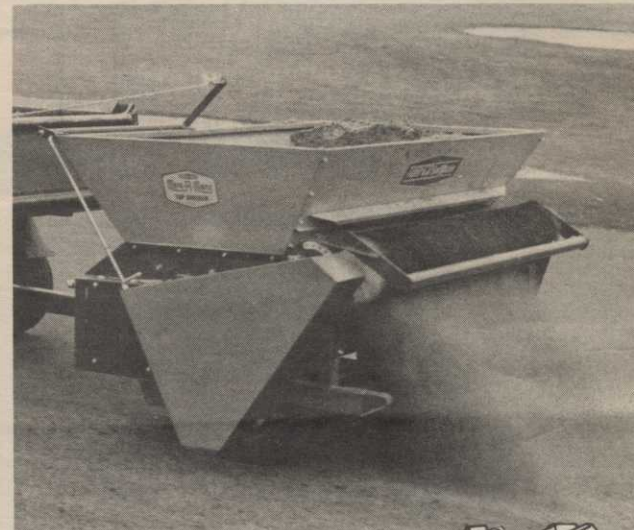
to Florida, experiments and tests met with little success.

Haas isn't discouraged, though. He believes his venture will mushroom with proper financing, that maintenance reduction by 50 to 75 percent is a major factor, and that the substitute soil carpet which requires so little care, yet plays like dry bent grass, is another strong selling point.

Ron Edgecomb is weighing Mod-Sod installation at his 18-hole par 3 Westerly Winds course in Westbrook, Maine. This type course traditionally takes a beating from largely game beginners.

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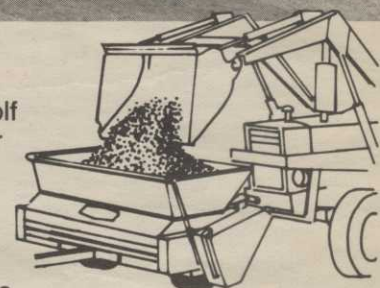
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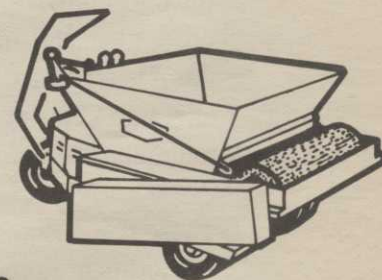
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Hyundai

Continued from page 1

on as scheduled" and Hyundai officials in Seoul, Korea, and the United States are working on the legal steps.

Cho said the carts will be manufactured in Korea.

He said the Hyundai cart will be three-wheeled and gas-powered.

He said it was "difficult to say" the price of the carts but they "will be not much different than other golf carts."

Asked his firm's distribution

plans for the new product, Cho said Hyundai "would like to set up dealerships."

Hyundai is not a newcomer to golf cart production, having made carts for other firms in Europe and Asia.

It will be the third foreign firm manufacturing golf carts for sale in the United States. Yamaha Motor Corp. U.S.A. is Japanese and Melex is Polish.

E-Z-GO, Club Car and Columbia

Golf Car are the other manufacturers, and it is difficult to project the reaction of these companies to another competitor in a market where an estimated 110,000 units are sold in the United States each year.

"I really don't know what will happen. I've never dealt against Koreans in this particular marketplace," said John English, director of marketing for Columbia in Madison, Wis. "There's always

a lot of rumors in the golf cart industry. We've heard about different players getting into the industry, but there's not a whole lot you can do about what your competition does."

Still, competitors must wait and see how Hyundai will market its cart and what styles and options it will produce.

Retail sales, the fleet business, utility vehicles—they're all part of the selective marketplace.

Green Section plans sessions

Superintendents in the USGA Green Section's Mid-Continent area plan regional conferences March 9 at Cherry Hills Country Club in St. Louis, Mo., and March 21 at Ramkota Hotel and Conference Center, Sioux Falls S. D.

Information will be offered on a wide range of turfgrass and golf management topics.

The conferences are open to superintendents, golf professionals, club managers, owners and operators of daily fee facilities and golf-related groups.

Nat'l experts set to speak

Experts from coast to coast will speak at the Maine Turfgrass Conference and Show on March 27-28 at Holiday Inn Downtown in Portland, sponsored by the Maine Golf Course Superintendents Association.

Ron Hall, golf course construction contractor in Seattle, Wash., will address the first-day session. Nick Christians, professor of turfgrass science at Iowa State University, will speak at both morning and afternoon sessions the opening day.

William Roberts, chairman of the Golf Course Superintendents Association of America's Government Relations Committee and superintendent at Lochmoor Club in Grosse Pointe Woods, Mich., will speak the second day.

Sherwood Moore of Amherst, Mass., and Professor Richard Skogley of the University of Rhode Island, who will both be honored by the GCSAA in February, Anaheim, will also speak, along with Houston B. Couch, professor of turfgrass pathology at Virginia Polytechnic Institute, Blacksburg, Va.; architect Steven Kay of Purchase, N.Y.; Rich Minier of Storrs, Conn.; Ed Correia of Greenland, N.H., and meteorologist Lou McNally of South Portland.

Henry Jennings of the Maine Board of Environmental Control in Augusta, Jim Connolly of the United States Golf Association in Far Hills, N.J., Couch and Roberts complete the conference's speakers the second day.

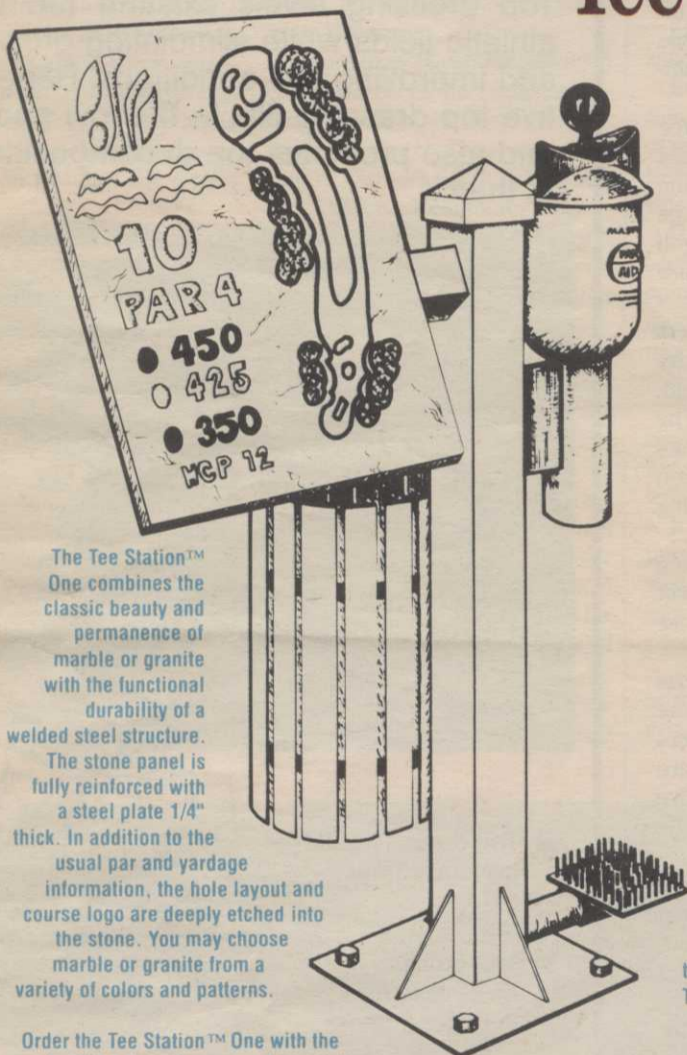
Three can hit in golf cage

A three-man Golf Cage, called the "Big Hitter," has been designed to give three golfers adequate space to safely hit woods and irons.

Gold Medal Recreational Products, Blue Mountain Industries, of Blue Mountain, Ala., is making the weatherproof knotless nylon setting cages so that their panels are individually replaceable without dismantling the cage.

The double baffle receiving net eliminates rebound. Support posts can't be hit with a driven ball and the cage has a spectator protective net as well as wing nets on forward support cables.

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ON THE MOVE

McCumber names Haglund

Norman Haglund has been appointed director of golf for the Golf Management Division of McCumber Golf, with primary responsibilities for the Ravines Golf and Country Club in Middleburg, Fla.

Mark R. McCumber of the Middleburg golf course architectural, design and golf-related management consulting firm said Haglund, 35, a Mulberry, Fla., resident and a Class A PGA golf professional, had been director of golf at Imperial Lakes Country Club in Lakeland, Fla., and Sun 'n Lake Golf & Country Club in Sebring, Fla.

The Ravines GCC is a 450-acre

residential community located 15 miles south of Interstate 295 in Middleburg, near Jacksonville. McCumber hopes to position Ravines as the premier regional location for high-level corporate golf outings as well as a site for small to mid-size corporate retreats that might incorporate a golf outing.



Robert Hill

Hill promoted at Kubota

Robert J. Hill of El Toro, Calif., has been promoted to the position of director of marketing for Kubota Tractor Corp., according to company President S. Egusa.

Hill has served as Kubota's product manager of tractors for 1 1/2 years and will now be responsible for the four product sales groups, product planning, market share and marketing support programs including advertising and public relations.

A Winnipeg, Canada, native, Hill was previously employed by Deutz-Allis, where he held various sales management positions within the United States.

Clark named sales manager

Donald N. Clark has been appointed national sales and marketing manager for the Service Parts division of Power Lawnmower Parts, Inc., Rochester, N. Y.

Power Lawnmower Parts manufactures and supplies packaged and bulk replacement parts and accessories for the outdoor power equipment industry.

Fore selected

Fore Golf, Inc. has been selected as the new management company for The Plantation's golf course in Leesburg, Fla.

Fore Golf built the first nine holes of the 18-hole, par 72 course.

Hueber leaves NGF

David B. Hueber, who for five years led the National Golf Foundation as president and chief executive officer, resigned on Feb. 3 to join Ben Hogan Co. as executive vice president.

NGF Executive Vice President Dr. Joseph Beditz has assumed Hueber's duties until a replacement is found.

NGF board Chairman Dr. John Jepson cited Hueber for giving the NGF focus.

"I leave the foundation in good



David Hueber

hands with every confidence that it will continue to develop and grow," Hueber said.

Forest Ridge picks Babe

John Babe, former assistant golf course superintendent at Tulsa, Okla.'s Southern Hills Country Club, has been named superintendent at the new Forest Ridge Golf Club being built in Broken Arrow.

Babe worked eight years with Southern Hills and three with Quail Creek CCB in Oklahoma City.

Developer Joe Robson said Babe "comes from a program recognized as one of the top 10 in the U.S. and it is our goal to have the type of ... operation comparable to any private club in the area."

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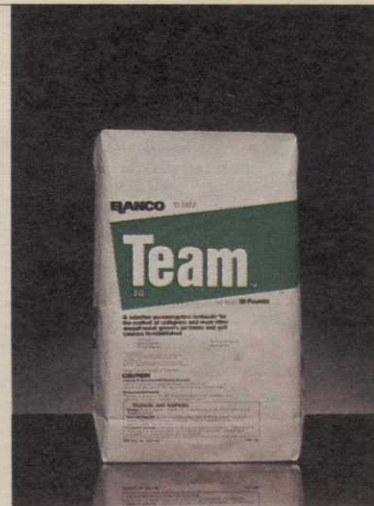
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Hard-hitting issues, educational classes

No other event in golf — certainly none geared toward golf course superintendents — approaches the Golf Course Superintendents Association of America's annual convention, says outgoing GCSAA President John A. Segui.

Segui said from his Philadelphia office that education "affects a lot of different people in the golf industry, in the green industry as a matter of fact, and they look forward to attending the GCSAA meeting each year."

This year, one- and two-day seminars, forums on current issues, awards presentations and a trade show will highlight the 60th Annual International Golf Course Conference and Show, Feb. 6-13, at Anaheim. C



Bob Drum

The international show will be the largest in the history of the Golf Course Superintendents Association of America, according to Segui. The industry's biggest annual product and service-related exhibition ranks in Trade Show Week's top 200 and more than 400 manufacturers and distributors will have booths.

"I don't believe 60 years ago the superintendents who started this ever believed it would be as big as it is today," Segui said. "The GCSAA is basically an educational organization and in 1988 our membership went over the 8,000 mark, and we expect between 13,000 and 14,000 people at this conference — which will be the biggest ever. We expect

over 400 companies represented there."

The convention is being held at the Anaheim Convention Center and nearby Anaheim Marriott Hotel and Anaheim Hilton & Towers.

The week will be loaded with something for all golf course superintendents as well as builders, developers and architects. It will begin with 34 one- and two-day seminars Monday through Thursday, and continue with educational presentations on a range of topics from environmental and regulatory laws to turfgrass management Friday through the Monday.

Segui said the conference will also feature a meeting for international groups from

READ...the fine print.



John Segui

Segui leaves glad, satisfied

When John A. Segui of Philadelphia steps down the weekend of Feb. 11 as president of the Golf Course Superintendents Association of America, he will complete an "unforgettable" year.

"It's been a year I'll never forget, and I would certainly encourage any superintendent out there to go right out and get involved in the organization," Segui said. "The rewards certainly outweigh any inconveniences.

"It's one of the best ways I know of

"It's one of the best ways I know of giving back to the industry that has been so good to us."

giving back to the industry that has been so good to us."

A highlight of the year for Segui came in November when he met a group of Russians who are building a golf course designed by architect Robert Trent Jones Jr. 30 miles outside of Moscow.

"To be in their presence and to be sure Russia will learn this great game of golf was a thrill," Segui said.

Segui was also looking forward to meeting with golf officials from around the world during the 60th Annual International Golf Course Conference and Show.

But he is also ready to relinquish the GCSAA reins to Dennis Lyon of Aurora, Colo.

"I've had a great year but you've got to make way for the next guy," he said. "I'm sure Dennis will be prepared."

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release is so slow, it's almost useless, and will most likely occur during the hottest periods, just when you don't want it.

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highlight weeklong golf conference

overseas — a luncheon for superintendents from Great Britain, Japan, Germany, Taiwan, Scotland, Australia and South America “coming to see the greatest show in turf.”

“And it’s our way of welcoming them and letting them know that they are part of the golf course industry just as much as we are,” he said.

A master schedule follows:

MONDAY, FEB. 6

GCSAA Golf Championship at LaQuinta Hotel Golf & Tennis Resort at Mission Hills Country Club and PGA WEST in Palm Desert, Calif.

7 a.m. — Check-in and seminar registration at Wyndham Hotel.

8 a.m. — Monday-Tuesday two-day seminars:

- “Basic Principles of Turfgrass Management,” presented by Iowa State University horticulture Professor Nick Christians, Ph.D.

- “Golf Course Design Principles,” taught by architects Geoffrey S. Cornish and Robert Muir Graves.

“Golf Course Restoration, Renovation and Construction Projects,” presented by Lohmann Golf Designs, Inc. President Robert M. Lohmann and architect Brian M. Silva.

“Introduction to Soil Science,” taught by Kansas State University soil science Professor Steve J. Thien, Ph.D.

- “Introduction to Surveying,” taught by civil engineering Professor Thomas E. Mulinazzi of the University of Kansas.

- “Irrigation Part I: Equipment and Technology,” presented by golf course irrigation consultant David D. Davis and Toro Co. Product Application Manager C. William Speelman.

- “Managerial Productivity,” presented by Gerry Sweda, a former golf course superintendent and current regional sales manager of O.M. Scott and Sons.

- “Plant Nutrition and Fertilizers,” presented by University of Georgia turfgrass science Associate Professor Robert N. Carrow, Ph.D., and Michigan State University turfgrass management Professor Paul E. Rieke, Ph.D.

Noon — Seminar luncheon.

TUESDAY, FEB. 7

7 a.m. — Check-in and registration for seminars.

8 a.m.-5 p.m. — Monday-Tuesday two-day seminars continue.

8 a.m.-5 p.m. — One-day seminars:

- “Effective Business Writing,” taught by freelance writer Andrea Warren.

- “Familiarization with Accounting Procedures,” presented by accountant and tax consultant Garth J. Terlizzi of Private Ledger Inc.

- “Negotiating,” emphasizing employment contracts and presented by attorney Charles F.

Palmer.

8 a.m.-5 p.m. — Tuesday-Wednesday two-day seminars begin:

- “The Assistant Superintendent: Managing People and Jobs,” presented by management consultant Mary T. Rau and Bruce R Williams of Bob O’Link Golf Club.

- “Basic Turfgrass Botany and Physiology,” taught by Texas A&M University turfgrass physiology Professor James B. Beard, Ph.D., and Mississippi State Uni-



Rosie Grier

versity agronomy Professor Jeffrey Krans, Ph.D.

- “Insects on Turf, Trees and Shrubs: Principles of Control,” taught by Ohio State University entomology Professors David G. Nielson and Harry D. Niemczyk.

- “Landscape Plant Materials,” taught by Clemson University horticulturalist and landscape architect R. Gordon Halfacre, Ph.D., and Ohio State University landscape horticulture Professor

T. Davis Sydnor, Ph.D.

Noon — Seminar luncheon.

WEDNESDAY, FEB. 8

7 a.m. — Check-in and registration.

8 a.m.-5 p.m. — Tuesday-Wednesday two-day seminars continue.

8 a.m.-5 p.m. — One-day seminars begin:

- “Calculations and Practical Mathematics for Use in Turfgrass

Continued on page 30

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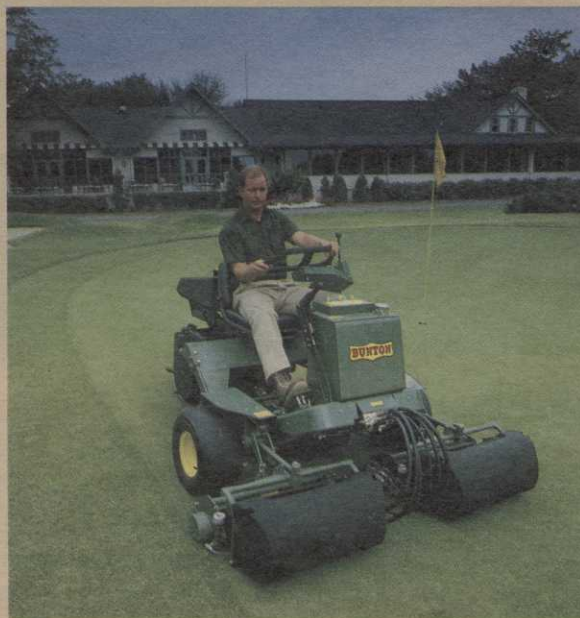
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NOW TRIPLEX GREENSMOWERS WILL NEVER BE THE SAME.

Conference

From page 29

Management," taught by horticulture Professors Michael Agnew and Nick Christians of Iowa State University.

- "Financial Management," presented by consultant Linda Roselius and Ted Roselius, director of the Small Business Institute at Colorado State University.

- "Maximizing Job Satisfaction," presented by Gerry Sweda, regional sales manager at O.M. Scott & Sons.

- "Safe Pesticide Application," taught by Bert L. Bohmont, Ph.D., coordinator of the Office of Pesticide Programs at Colorado State University.

- "USGA Intermediate Rules of Golf," presented by USGA Western Region Manager Ronald R. Read.

8 a.m.-5 p.m. — Wednesday-Thursday two-day seminars begin:

- "Business Communication and Assertiveness Techniques," taught by J. Stephen Hazel, Ph.D., of the University of Kansas Department of Human Development.

- "Disease Identification and Control," taught by plant pathology Professors Houston B. Couch, Ph.D., of Virginia Polytechnic University and Philip O. Larsen, Ph.D., of the University of Minnesota.

- "Environmental Considerations in Golf Course Management," presented by consultant William A. Thomas, Ph.D., of Law and Science Associates and Winand K. Hock, Ph.D., coordinator of the Pesticide Education Program at Pennsylvania State University.

- "Golf Course Construction Techniques and Management," presented by Stephen Harrell, president of Wadsworth Golf Construction Co. of the Southwest, and architect Michael J. Hurdzan, Ph.D.

- "Irrigation Part II: Systems Design and Management," taught by golf course irrigation consultant David D. Davis and C. William Speelman, product application manager for Toro Co.

- "Not Necessarily for Newsletter Editors," taught by freelance writer Andrea Warren.

- "Turfgrasses: Qualities, Uses and Sources," taught by turfgrass breeding and genetics Associate Professor M.C. Engelke, Ph.D., of the Texas Agricultural Experiment Station in Dallas, and Richard Hurley, Ph.D., director of research and agronomy for Lofts, Inc.

- "Union Labor Relations and NLRB Regulations," presented by Herbert W. Larrabee of Human Resource and Profit Associates, Inc.

- "Weed Identification and Control," taught by Mississippi State University weed science Professor G. Euel Coats, Ph.D., and University of Kentucky agronomy Professor A.J. Powell Jr.

Noon — Seminar luncheon.

THURSDAY, FEB. 9

7 a.m. — Scholarship and Research Committee meeting and in-

terviews.

7 a.m. — Check-in and seminar registration.

8 a.m.-5 p.m. — Wednesday-Thursday two-day seminars continue.

8 a.m.-5 p.m. — One-day seminars begin:

- "Biology of Turfgrass Soils," taught by The Lawn Institute Executive Director Eliot C. Roberts, Ph.D.

- "Cardiopulmonary Resuscitation," taught by the Orange

County Chapter of the American Red Cross.

- "Certification Examination Study Guidelines," with instructors including Dr. Nick Christians of Iowa State University, Linda and Dr. Ted Roselius of Colorado State University and the USGA's Ronald Read.

- "Employee Training," presented by consultant John P. Meszaros.

- "Introduction to Computers in Golf Course Management,"

taught by Rod McWhirter, golf manager with Rainbird Sales, and Richard Slivinski, a consultant with Leisure Time.

11 a.m. — Registration opens.

11:30 a.m. — Past presidents hold luncheon meeting.

Noon — Seminar luncheon.

2 p.m. — International hospitality room opens.

5:15 p.m. — Opening session and reception.

Bob Drum of "The Drummer's Beat" fame on CBS Sports' cover-

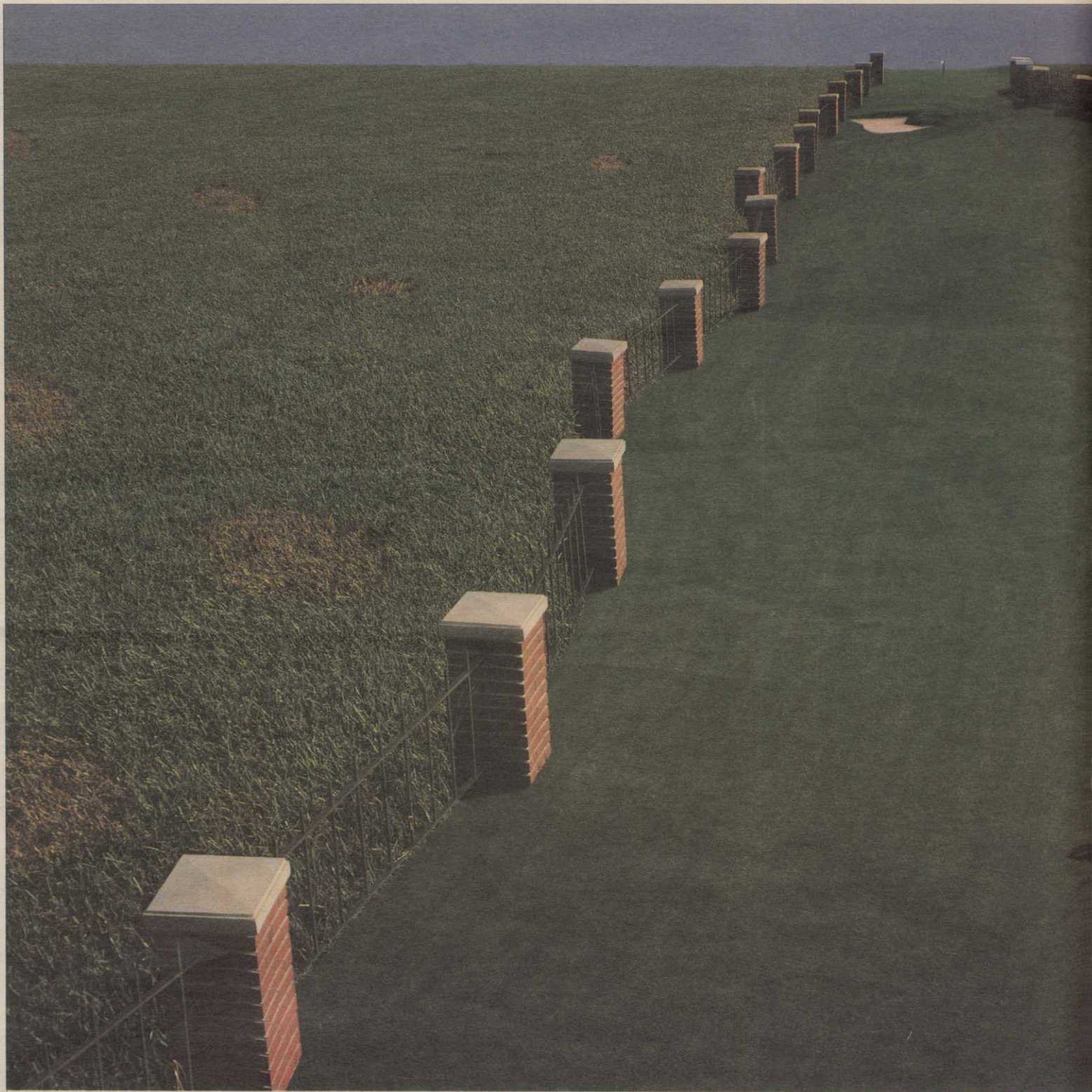
age of golfing events will speak at the opening session at the Anaheim Marriott Hotel. Drum, who has co-authored three books with Arnold Palmer, has consulted for golf tournaments throughout the United States and spoken at many sports banquets nationwide.

FRIDAY, FEB. 10

7:30 a.m. — Registration opens.

8:30 a.m. - noon — Concurrent educational sessions:

- Environmental and Regula-



Keep your fairways
looking great.

tory Issues.

- Golf Course Management Techniques: Part I.
 - Public Golf Operations.
- 11:30 a.m. — CGCS luncheon for all currently certified superintendents. Pre-registration is required and tickets will not be available the day of the luncheon.
- 1 p.m. — Conference and Show Committee meeting.
- 1-4:30 p.m. — Concurrent educational sessions:
- Golf Course Management

Techniques: Part II.

- Poa Annua: Friend or Foe?
 - Southern Turfgrass Management.
- 5:15 p.m. — Members' briefing and "Meet the Candidates."
- SATURDAY, FEB. 11**
- 7:30 a.m. — Registration opens.
- 9 a.m. — Ribbon-cutting ceremony to officially open the Trade Show.
- 9 a.m. — Certification examination; all examinees must be ap-

- proved applicants in the certification process, and all certification applications must have been submitted to the GCSAA headquarters by Jan. 1.
- 9 a.m. - 5 p.m. — Trade Show.
- 10 a.m. — Technical research advisory meeting.
- 11 a.m. — Communications and Awards Committee meeting.
- Noon — Voting delegate luncheon.
- 1-2 p.m. — Voting delegates check in.



Roger Dawson

- 1 p.m. — Concurrent educational sessions:
- Black Layer Forum III: What Have We Learned?
 - Contemporary Soil and Water Issues.
- 1-5 p.m. — Golf Course Builders of America session, including:
- "So You Want To Build a Golf Course" at 1:10 p.m.
 - "Building a New Golf Course— When Does the Superintendent Come on the Job?" at 1:30.
 - "Opportunities for the Golf Course Superintendent in Europe" at 2.
 - "Golf Course Water Pump Systems — the Latest Technology" at 2:30.
 - "The Realities of Water Management" at 3.
 - "Traditional Golf Course Design and Its Relationship to Maintenance" at 3:30.
 - "Advancement in Equipment and How It Has Changed Golf Course Design" at 4.
 - "Forward Tees and Their Role in Modern Golf Course Design" at 4:20.
 - "The Architect/Builder and His Relationship to the Developer" at 4:40.
- 8 p.m. — Golf Course Builders of America banquet.



Harvey Selverston

SUNDAY, FEB. 12

- 7:30 a.m. — Prayer breakfast.
- Former National Football League great Rosie Grier will speak at the 10th annual prayer breakfast. Grier heads "Are You Committed?" — a non-profit corporation that he founded to help underprivileged young people.
- 7:30 a.m. — Registration opens.
- 9 a.m. — Governmental Relations Committee meeting.
- 9 a.m. — Voting delegates check in.
- 9-11:30 a.m. — Major speaker sessions:

Roger Dawson, a leading expert on the art of negotiation, will speak on "You Can Get Anything You Want, But You Have To Do More Than Ask," while stress management trainer Harvey Selverston will talk on "Coping Skills."

In a session chaired by Peter Rappoccio Jr. of CGCS, Dawson will go beyond the techniques of negotiating. He will help the audience learn what influences people and how to recognize and adjust to

Continued on page 32



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Families offered tours, seminars

Trips, cruises and seminars — with topics ranging from the serious ("The Superintendent's Wife: Life Issues") to the comic ("Humor Power") — will spice the days for spouses and children at the 60th International Golf Course Conference and Show in Anaheim, Calif.

Using the Anaheim Hilton as a meeting place, the Spouse Program will start Friday, Feb. 10, and continue through Tuesday, Feb. 13.

The Spouse Program Activity Center will open at 8 a.m. each day and the \$2 tickets will be available at the center. Meanwhile, most of the action will take place elsewhere, including:

- A Universal Studios tour and lunch from 9:30 a.m. to 4:30 p.m. Friday.

- Four tours Saturday: a Newport Beach cruise and shopping at Lido Marina Village from 9 a.m. to 3 p.m.; a trip to San Juan Capistrano and to Laguna Beach with its art galleries, studios and boutiques from 9:30 to 3:30; tour of Howard Hughes' Spruce Goose plane and the Queen Mary at Long Beach Harbor from 10 to 4; and a trip to the Spanish gardens at Lawry's California Center and the Huntington Museum, Gardens and Library in San Marino from 10:30 to 4:30.

- A whale-watching cruise, for an additional fee, from 8 a.m. to noon Sunday.

- A Circus Party for children, at an additional fee, featuring mime, magic, juggling and face-painting from 1 to 5 p.m. Sunday.

- A bargain shopping trip to the garment district, where shoppers can expect 30 to 75

percent off retail prices, from 9 a.m. to 2 p.m. Monday.

Host wives have organized two fashion shows from 1:30 to 4 p.m. Sunday. One show will demonstrate unit clothing, one-size-fits-all, and the mix-and-match concept, while the other will feature the Moroccan-styled, layered "Laise Adzer" look.

Meanwhile, at the hotel, seminars will highlight the weekend. Dr. Virginia Tooper, a former university faculty member who now devotes her time to positive uses of humor on and off the job, will speak on "The Power of Humor" from 9 a.m. to 3 p.m. Friday, with time off for lunch.

Marie Schmidt, an expert in clinical social work, will lead a seminar on "The Superintendent's Wife: Life Issues" from

9:30 a.m. to 4:30 p.m. Saturday, with a break for lunch. She will discuss negotiating periods of crisis, change and growth within family relationships.

From 9 a.m. to noon Sunday conference participants and their spouses may attend one of the concurrent major speaker sessions: Roger Dawson on "You Can Get Anything You Want, But You Have To Do More than Ask" and Harvey Selverston on "Coping Skills with the Wizard of Stress."

The GCSAA asks spouses to register early since all Spouse Program and optional activities are subject to cancellation if registration does not reach minimum levels.

Tours are also being offered to all conference attendees who arrive before the Spouse Program

Conference

Continued from page 32

different personality styles so they can get what they want regardless of the situation.

Selverston, the "Wizard of Stress," will deal with the issues professionals face at work and home. He feels people need enough stress in their lives to feel stimulated and productive but not so much that they feel overwhelmed and exhausted. In a session led by Kenneth B. Rue, Selverston will teach the skills needed to find and remain on that middle path between anxiety and boredom.

9 a.m.-5 p.m. — Trade Show.

11 a.m. — Public Relations Committee meeting.

1 p.m. — Voting delegates check in.

1-4 p.m. — American Society of Golf Course Architects session, including:

- "Remodeling for Championship Play" with Reese Jones at 1:15 p.m.

- "There's More Than Meets the Eye" with Arthur Hills at 1:45.

- "Dealing with Contractors" with Jeff Brauer at 2:15.



Alex Shigo

- "Working with the Superintendent" with Gary Baird at 3.

- "Remodeling Tees for Women" at 3:30.

- A discussion with the speakers at 4.

1 p.m. — State government relations forum, presenting how superintendents and



Chi Chi Rodriguez

their groups have dealt with trying to influence public policy. Issues ranging from posting to water use will be discussed at the session moderated by Sam White of White and Associates in Washington, D.C., and including a panel of Edward C. Horton of the

Westchester CC in Port Chester, N.Y., Michael D. Vogt of the Illini CC in Springfield, Ill., Robert Dickison of Upper Montclair CC in Clifton, N.J., Charles T. Passios of Hyannisport (Mass.) Club, Dennis James Orsborn of Sunrise Co. in Palm Desert, Calif., and Richard Marcks of Fairview CC in Greenwich, Conn.

1 p.m. — Computer special interest group meeting. This session, led by Duane E. Patton, is focused on superintendents who are considering buying a computer system and those who have computers and want to expand their usefulness.

1-3:30 p.m. — Certification open forum.

1-4:30 p.m. — Symposium on "Tree Biology in Practice," led by noted tree expert Dr. Alex L. Shigo. Shigo's concern is what keeps a tree healthy rather than what makes it sick, and the symposium will deal with practical applications of the most current knowledge of the biology and care of trees. Advance registration is required for the session, which will be chaired by Michael W. Rothenberg of the CGCS.

3 p.m. — Certification Committee meeting.

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MONDAY, FEB. 13

8 a.m. — Industrial Relations Committee meeting.

8-11:50 a.m. — USGA Green Section program, including:

- "Turf Tips of 1988 — Part I" at 8:10 a.m.
- "The International Flavor of Golf Course Management" at 8:25.

- "It's a Matter of Opinion" on turf schools, research funds and grasses at 8:45.

- "Water for Golf Course Use — 1989 and Beyond" at 9:15.

- "Turf Tips of 1988 — Part II" at 9:45.

- "Things To Do Before Contacting a Golf Course Architect" at 10 a.m.

- "Contemporary Golf Course Architecture — Saga or Satire?" at 10:20.

- "Turf Tips of 1988 — Part III" at 11:30.

9 a.m. — Certification examination.

9 a.m. - 1 p.m. — Trade Show.

1 p.m. — Annual meeting.

5:45 p.m. — VIP guest reception (by invitation).

6 p.m. — Banquet reception.

7 p.m. — Annual banquet. The GCSAA will feature presentation of the Old Tom Morris Award to Chi Chi Rodriguez, whose predecessors receiving the honor include President Gerald Ford, Bob Hope, Arnold Palmer, Gene Sarazen, Patty Berg and Robert Trent Jones.

Singer Bobby Vinton will entertain following the banquet and awards ceremony.

Insurance

protect themselves against the high costs of damages and suits from accidents — whether they occur on the fairway or in the kitchen.

FAI Insurance Counselors of Florham Park, N.J., the managing general agents for Crum & Forster Commercial Insurance, is making its uniquely tailored Country Club Program available nationwide. FAI's insurance program is specifically designed for golf courses and their unique needs.

Until recently it has only been available in a few states, but FAI Vice President Tom Marks said it is catching on like wildfire.

"It's been well received," Marks said, adding that it is similar to a program available since 1983 in the New York and Philadelphia metropolitan areas through sponsorship of the Metropolitan Golf Association and the Golf Association of Philadelphia. "Now that we are comfortable with it, and our insurance carriers are ... we are rolling it out by state. By the third quarter of 1989 we expect to be in every state."

Hands-on work

Jim McLoughlin of Pleasantville, N.Y., president of The McLoughlin Group golf consulting firm and executive director of the Golf Course Superintendents Association of America from 1980-83, said golf course employees rather than the golfers are often the ones injured.

"It seems there are two or more major accidents every year involving superintendents," McLoughlin said.

Steve Campbell, the superintendent at Aronomink Golf Course in Newton Square, Pa., concurred, saying that superintendents and their crews work with a lot of heavy equipment and "courses need a lot of hand work" that can be dangerous.

"Hydraulic pressure (on some equipment) often reaches 1,500 to 2,000 pounds pressure," he said, "and you have to be careful. It's comparable to some extent with farm work."

Why it works

The keystone to FAI's Country Club Insurance Program is its "strong safety and risk-management standards," says Marks.

"We help clubs avoid losses they wouldn't have avoided in the past. We are very effective risk managers," adds Rollins, Berrigan and Hunter Executive Vice President Gerry Berrigan, whose firm is a marketing agent for FAI. "An insurance loss is no good for anybody. The best insurance is that not used.

"We have engineered the losses right out of the club."

Engineered is the word. Before insuring a course, the company sends an engineer to inspect the club and recommend changes to improve safety.

The inspector will basically:

- Check the golf carts and cart paths.

"We coach the clubs to not allow kids to drive carts and we encourage operator training sessions," Marks said. "Golf cars are a source of many claims for country clubs. They are a hazard if they are not properly operated.

"Courses designed and built 40 or 50 years ago never considered having carts travel on them."

- Investigate the handling and storage of turf chemicals as well as the spill-containment procedure to ensure that the club is meeting state and federal guidelines.

"One of the things we do is work closely with superintendents with usage and control of chemicals," Berrigan said. "We offer pesticide applicators liability insurance which covers the club and its licensed pesticide applicators."

The insurance firm has contracted with Versar to survey courses and give them reports on their environmental situation; it is a preliminary survey on the club's environmental exposures, and based on the report the club can decide on its own to proceed with further actions with Versar's help.

- Check other areas and practices for safety, such as swimming pools, handling of liquor, the cooking operations, exit signs and doors, emergency lighting and sprinkler systems.

Without FAI's strong safety and risk-management standards "there would be no long-term viable program," Marks said. "The program has met with great success and it's partly because of the country clubs adopting the safety standards."

"Our insurance carriers feel more comfortable with clubs that comply with our recommendations," he said.

"It's not unusual for a Crum & Forster engineer to come back with 10 to 15 recommendations" during the initial survey, Marks said. To continue to qualify for coverage, each club must pass an annual resurvey and be in compliance with any new recommendations generated from that survey.

Don Molitor, who manages Fenway Golf Course in White Plains, N.Y., said the inspection approach "keeps everyone on their toes. Not that we would intentionally do something that would cause an accident, but they might fall between the cracks."

At Fenway, the engineer checked the course and areas of assembly like the superintendent's maintenance complex and the halfway house.

Molitor added that without being part of the Metropolitan Golf Association program, Fenway would "have a tough time getting coverage, let alone at such low costs."

Campbell, whose Aronomink Golf Course was an early participant in the insurance program, said it has been a big help to his club.

Uniquely defined coverage

FAI's customized Country Club Insurance Program:

- Redefines property in its plan, covering the following man-made structures and improvements: Bridges, towers, dams, pipes, exterior light fixtures and poles, sprinkler systems and equipment, tennis courts and golf holes which are defined as "tees, cut fairways and greens areas."

- Covers golf holes for these perils: vandalism or malicious mischief, fire, lightning, explosion, riot, civil commotion, aircraft, vehicle damage and wind.

- Covers mobile and maintenance equipment on a stated basis.

- Covers "mysterious disappearance."

- Offers blanket building and contents limits.

- Makes agreed amount coverage available.

The plan's liability highlights include:

- \$1 million limit for general and liquor liability.

- Employees are additional insureds for general and liquor liability.

- Club members are additional insureds.

- The umbrella policy includes coverage for liquor liability, D&O and employee benefits liability.

- Umbrella and excess limits are available up to \$30 million.

Availability is imminent

The Country Club Insurance Plan timetable is fast-spreading and specific, being available:

3 Oct. 1, 1988: In North and South Carolina.

3 Nov. 1, 1988: In Illinois.

3 Dec. 1, 1988: In Ohio.

3 Late December 1988: In Connecticut, Delaware, Maine, Massachusetts, New Hampshire, Pennsylvania, Rhode Island, Vermont and West Virginia.

3 Jan. 1, 1989: In Alabama, Florida, Georgia, Indiana, Kentucky, Maryland, Michigan, Mississippi, Tennessee, Virginia, Washington, D.C., and Wisconsin.

3 April 1, 1989: In Colorado, Kansas, Missouri, Nebraska, New Mexico and Wyoming.

3 July 1, 1989: In Arkansas, Iowa, Louisiana, Minnesota, North Dakota, Oklahoma, South Dakota and Texas.

3 Sept. 1, 1989: In all the far West.

He said the exclusive Aronomink club is very safety-oriented, yet the FAI engineer found a couple of situations he wanted corrected.

"We had one bridge they wanted us to reinforce. We actually replaced it," Campbell said. "And we needed to put handrails on a couple of inclines they thought might cause a problem."

Aronomink was built in 1928, before the advent of golf carts, and it had to recontour areas to facilitate carts. "But you still have human error," Campbell said, and a course should be prepared for the consequences.

Through the risk-management program, golf course can work towards a loss-free environment that greatly reduces the chances of having a catastrophic loss.

The insurance plan includes complete property, casualty and liability coverage for private clubs as well as pesticide and herbicide coverage, liquor liability, directors' and officers' liability, business auto, inland marine and crime and umbrella liability coverage.

Campbell said safety goes hand in hand with maintaining equipment and training employees — especially in use of chemicals.

Don Rossi, president of both the Golf Course Builders Association and Golf Cart Manufacturers Association in Palm Beach Gardens, Fla., said golf cart accidents have been a major problem and that they often happen during group outings.

Rossi, former director of the National Golf Foundation, added that vandalism is another major headache golf courses have been unable to lick.

McLoughlin, who counsels superintendents and developers all over the world, said disability coverage in the golf industry has been inadequate, and that liquor liability and fire insurance have been additional problems.

Headache medicine

But FAI hopes to have solved those headaches for all time and for many clients.

Berrigan said, "We thought it was a good time to develop a program that included all coverages a club would need and take some of the wrinkles out of the (existing) policies... We're attempting to offer everything a club needs in a state-of-the-art insurance setup — from one source. We are effectively a one-step source for all those needs."

FAI has dedicated 18 people to working solely on the Country Club Program.

Under the sponsorship of the National Golf Foundation and working with Crum & Forster and the Chubb Group of Insurance Companies, FAI last fall started expanding the program from New York, Pennsylvania and New England to courses in North and South Carolina, Illinois and Ohio. Now it is selling the program to courses along the East Coast and is heading toward the West Coast.

"We expect to be in the far Western states by September," Marks said.

Berrigan said FAI is working with the golf courses' insurance brokers, so it is not displacing them or in competition with them in

the process.

Jerry Hurley, president of the National Club Association, said FAI's program "probably today offers the greatest variety of coverages, but whether those coverages and costs will hold when the market tightens is another question.

Holding firm?

"Right now it is a soft market, which means that the (insurance) companies are out looking for business and, depending on the company, they are more accommodating in changing their package, et cetera. As times get hard they often change their terms all over the country.

"Depending on where you are, you may find yourself facing a major increase and/or loss of insurance," Hurley said.

But Marks points to FAI's five years of offering the insurance to a limited area through the thick and thin of insurance markets.

Through that time "we've done nothing but improve the product while at the same time remaining competitive," he said.

Marks said since the program's inception in 1983 it has enjoyed a 98-percent retention rate of clients.

The insurers say that during the last five years this program has brought in more than \$30 million in premiums. The average club's premium would be in the vicinity of \$40,000 to \$60,000.

As an added service Marks promotes the programs at seminars and business meetings for club officials, superintendents and managers.

"To be frank," said the NCA's Hurley from his Washington, D.C., office, "it's been very difficult to find a carrier to address the needs of golf clubs through an NCA program, and it just hasn't happened.

"Somehow, all credit to (FAI), they were able to fashion one at the right point... We are still doing our best to develop and find insurance products to our members that will offer similar opportunities and alternatives."

The Country Club Insurance Plan is actually one of three FAI has developed for golf courses and associations. In 1988 it put into effect the Executive Risk Plan to provide directors and officers liability and fiduciary liability for private golf clubs, and the Association Insurance Program to provide property and casualty insurance for nonprofit golf associations and liability insurance for their directors and officers.

Adding the Country Club Insurance Program creates a package of products that FAI says can save golf facilities and associations considerable money on their annual premiums.

"We're not just marketing an off-the-shelf insurance product," Marks said. "We've developed a comprehensive program for country clubs along with strong risk management programs and inspecting for safety features."

And those are progressive ideas that will change the heart of insurance coverage at golf courses nationwide in the year ahead.

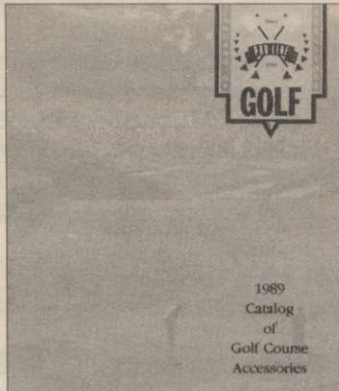
NEW LITERATURE

Products shown from tee to green

Standard Golf Co.'s new 40-page, full-color 1989 Catalog displays the wide range of its products - from tee to green, clubhouse, practice range, maintenance shed and more.

More information may be obtained by contacting Standard Golf Co., P. O. Box 68, Cedar Falls, Iowa 50613; telephone (319) 266-2638.

Circle No 160



Is your community up to par?

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Our research shows the demand for golf in the U.S. is such that some 4,500 new courses will be needed by the Year 2000.

This averages out to 375 per year. . . **one new golf course each and every day for the next 12 years!** Unfortunately, the current rate is closer to 125 per year.

Clearly, golf course construction is not keeping pace with demand . . . especially in the public/municipal sector where the bulk of the demand is occurring.

Recognizing the impact this imbalance could have on the future growth and enjoyment of the game, the National Golf Foundation has developed programs to help communities realize the many benefits of golf course development.

Please contact us to learn how the NGF can help your community assess and meet its public golf course needs.



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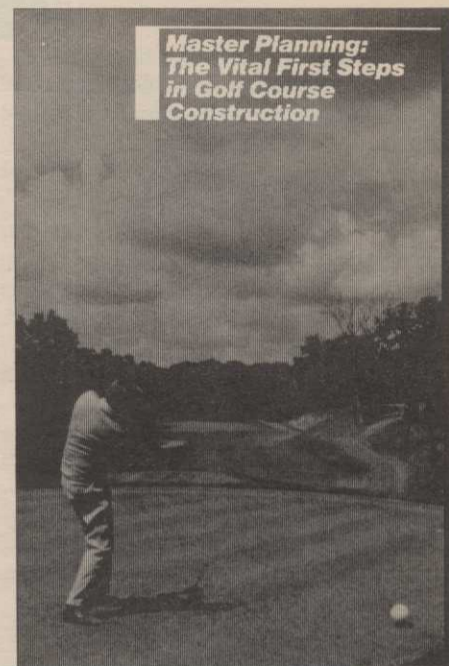
The American Society of Golf Course Architects offers three brochures as guidelines to planning golf course projects.

"Planning The Real Estate Development Course" is a guideline on construction costs, site selection, acreage requirements and financing for the developer.

"Master Planning: The Vital Steps in Golf Course Construction," describes in detail various aspects of course construction and steps involved in developing a golf facility.

"Planning The Municipal Golf Course" is geared to municipal and park district officials planning a public golf course. The eight-page pamphlet outlines the amount of acreage needed, financing and how to proceed with such a project.

For these free brochures, send a stamped, self-addressed envelope to The American Society of Golf Course Architects, 221 N. LaSalle St., Chicago, Ill. 60601. Circle No 166



OSHA brochure, kit available

The Occupational Safety and Health Administration has made available a 20-page brochure, "Chemical Hazard Communication," which spells out updated information on the expanded Hazard Communication Standard.

The standard requires that employees be told of potential chemical hazards in the workplace.

The revised brochure presents an overview of hazard evaluation provisions, written hazard communication programs, labels, material safety data sheets and lists of hazardous materials.

People may obtain the brochure free of charge by writing; OSHA Publications, Room N3101, Frances Perkins Building, 200 Constitution Ave. N.W., Washington, D.C.

OSHA is also offering a new kit to help employers meet the expanded standards.

The OSHA 3104 Hazard Communication Compliance Kit can be ordered for \$18 from the Government Printing Office, Washington, D.C., 20402-9325. Circle No 162

Spoon-feeding made easy

Effectively "Spoon-Feeding" high traffic or problem areas on golf courses is the subject of a new four-color brochure from Plant Marvel Laboratories, Inc. "Spoon-Feeding" refers to the concept of applying small amounts of water-soluble fertilizer to selected high-traffic or problem areas to help turf achieve total nutrient utilization with even, predictable growth.

The guide features a graph showing how better levels of nutritional control are achieved with spoon-feeding, as well as a chart for achieving desired nitrogen application rates.

For a free copy, call or write: Plant Marvel Laboratories, Inc., 371 E. 16th St., Chicago Heights, Ill., 60411, 312-757-7500. Circle No 164



Safety modules made available

Direct Safety Co. has introduced a collection of safety education and training modules of interest to golf course superintendents and managers

Materials fully described and illustrated include: The Applicator's Guide to Pesticide Safety (available in English and Spanish), Working with Pesticides, Landscape Equipment Safety Training, The Landscape Chemical Field Handbook, and How To Prevent On-The-Job Injury, First Aid Manual for Chemical Accidents.

For a free catalog, write or call Direct Safety Co., 7815 S. 46th St., Phoenix Ariz. 85044; telephone (602) 968-7009. Circle No 161

Pocket guide a gopher getter

"To Control Pocket Gophers" is a handy pocket guide about the troublesome little rodent and how to control it.

The gopher is a medium-sized burrowing animal which gets its name from the fur-lined external cheek pouches in which it carries its food.

Certain species of this harmful and annoying pest often race backwards through their burrows, using their tails as guides.

Habits, breeding and diet are discussed, as well as principles of control, bait factors, machines to control and traffic control method. Priced at \$2.50, it is available from Donald W. Willis, P. O. Box 291, Lompoc, Ca. 93436. Circle No 163

ASGCA directory out

The American Society of Golf Course Architects' new membership directory, is available.

To obtain one, people may send a self-addressed, stamped business size envelope to: ASGCA, 39th Floor, 221 N. LaSalle St., Chicago, Ill. 60601.

The directory contains the name, addresses and phone numbers of the society's 94 members in the United States and Canada. There also is a map showing the location of each member.

This year's officers include: President Pete Dye, Del Ray Beach, Fla., Vice President, Robert Trent Jones Jr., Palo Alto, Calif., Secretary Don Maples, Pinehurst, N. C., and Treasurer Thomas E. Clark, Wheaton, Md. Circle No 165

NEW PRODUCTS

Lebanon's new product kills weeds

Lebanon has introduced Country Club 19-4-6 with Surflan® and Country Club 7-3-22 with Sukrflan® for use by professionals in controlling annual weeds in southern grasses.

Both new granular herbicide and fertilizer combination products will provide a balanced feeding, while controlling several broadleaf weeds and annual grasses, such as goosegrass, crabgrass and sandbur.

Formulated with Surflan pre-emergence herbicide, these products are especially effective on stop-



Lester device avoids arcing

Lester Electrical has introduced a model to avoid arcing at the contacts of the DC plug when charge is interrupted before the charger automatically shuts off.

Golf courses frequently wish to put golf cars in service before battery charging is complete. If the DC plug is removed while the charger is on, arcing can occur between the contacts of the plug on the charger DC cord and the contacts of the receptacle on the golf car.

Contact Vaughn E. Border, Lester Electrical, Inc., 625 West "A" Street, Lincoln, Neb. 68522; telephone (402) 477-8988. Circle No182

Cooler, easier water station

Standard Golf Co. has introduced the Kooler Aid Water Station, a rugged steel mesh enclosure that makes dispensing easy while keeping the cooler secure.

The new system discourages players and pranksters from opening the cooler to dip towels or clean balls.

The 10-gallon cooler is by Igloo and is manufactured of galvanized steel with a secure lid. A metal cup dispenser and heavy-duty tripod stand are included in the package.

Color-coordinated Litter Caddies may be ordered separately to control trash.

For more information, contact Standard Golf Co., P.O. Box 68, Cedar Falls, Iowa 50613; telephone (319) 266-2638. Circle No183

A light touch with LF-100

Extremely low ground pressure means less soil compaction and healthier turf when you use the LF-100, out-front five-gang reel mower from Jacobsen.

The new mower configuration puts the two outside reels in front of the operator, so the trimming edge is easily seen without looking back and away from the mowing path. The configuration also provides a shorter uncut circle of grass on



turns, and makes catcher removal and reel maintenance much easier. The LF-100 uses full floating reels follow ground contours closely and pivot through turns to

eliminate scuffing on the clean-up pass.

Write to Marketing Department, Jacobsen Division of Textron Inc., 1721 Packard Ave., Racine, Wis. 53403. Circle No 181



Handle your grub situation fast, before things get really ugly.

At the very first sign of grub damage, apply DYLOX® insecticide. Nothing kills all species of white grubs faster. Within hours, the grubs are dying and the turf is recovering. When grubs threaten, act fast.

Use DYLOX. And turn an ugly little problem into a lot of beautiful turf. For more information, contact Mobay Corporation, Specialty Products Group, Box 4913, Kansas City, MO 64120.



DYLOX is a Reg. TM of Bayer AG, Germany 04661

For Free Information Circle #126

Par Aide makes it easy

Par Aide announces a portable sign system in which notices can be posted in minutes - without tools.

To install the 60" black enameled posts, unlock, twist, lift and drive 12" into the turf. Removal is as easy.

White, pre-printed and blank signs complete Par Aide's system. The 12" x 18" signs attach to a steel rod hanger with S-hook fasteners and are made of 2mm all-weather plastic.



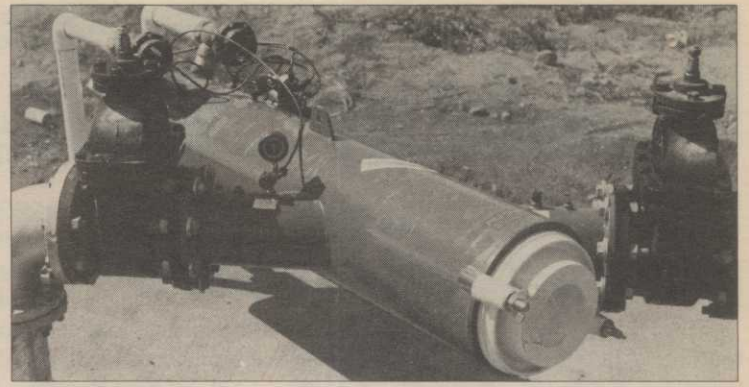
Contact Par Aide Products Company, 296 North Pascal Street, St. Paul, Minn. 55104 or call 612/646-7368. **Circle No 186**

New water sources made possible

Filtomat, the trade name of a new phenomenon in filtration technology, allows use of untapped water sources such as reclaimed and semitreated water in a modern irrigation system.

The self-cleaning water filter operates on water line pressure alone, requires no electricity, will not interrupt flow during rinsing, is compact, easy to install and requires no maintenance.

The Filtomat will remove dirt such as: sand, silt, algae, slime,



clams, snails, leaves and practically anything from any water source.

Filtration range is down to 15 micron (0.0006 inch), and minimum required pressure for

standard operation is only 30 ps.

Contact Filtomat, Inc., 6363 Wilshire Blvd., #211, Los Angeles, Calif. 90048; telephone (213) 651-0530. **Circle No 187**



Less mess and fewer repairs

Broken tees on a golf course can cost hundreds of dollars each year in repair bills for mowers and the time it takes to clear them away. But Standard Golf Co.'s new Broken Tee Caddie is made so broken tees don't have to be a problem any more.

The caddie is made of spun steel with a black thermo-coated powder finish and white "broken tee" decal. Its 9-inch-wide opening makes it easy for golfers to toss tees inside. Its drainage hole eliminates water accumulation, and a 5-inch steel spike holds it securely to the turf, yet allows it to be easily moved as the tee markers are positioned.

For more information, contact Standard Golf Co., P.O. Box 68, Cedar Falls, Iowa 50613; telephone (319) 266-2638. **Circle No 185**

Soil-retaining walls made

KeyStone Retaining Wall Systems has developed the engineered answer to soil-retaining wall structures.

The easily installed structures are structurally sound, durable, aesthetic and offer diverse applications.

The pinned, modular and mortarless product is available in three sizes: standard 8-by 18-by 24-inch, where height and strength is of primary consideration; 8-by 18-by 12-inch compact and 4-by 18-by 12-inch minicap.

All come in a curve-lneal rockface texture of natural quarried stone. Colors are available.

Contact KeyStone Retaining Wall Systems corporate offices at 7600 France Ave. South, Suite 110, Edina, Minn. 55435. **Circle No 184**

The battle of bunker hill just became history

You know the situation. Your hydrostatic rake loses front wheel traction coming out of a bunker and becomes as helpless as a beached whale.

That fight is over. Introducing the new John Deere 1200 Bunker and Field Rake. The 2-wheel-drive machine that wins the traction battle with built-in drivetrain efficiency—not built-in drivetrain expense.

The components are the keys. The 1200 is powered by a high-torque 10-hp engine. A pressure-lubricated 4-cycle workhorse designed for long life in tough conditions. A gear-driven transaxle with differential lock puts that power to work with an impressive gear reduction of 164:1.

Add the standard wet clutch and offset lug design of the tires and you bring impressive power, smooth operation and superior traction to every job. All at an affordable price.

Plus, you don't have to park this one once you're done grooming your bunkers. A standard hitch and optional front blade or cultivator helps the 1200 do even more.

Talk to your John Deere distributor today for more information about the gutsy new 1200 Bunker and Field Rake. Or write John Deere, Dept. 956, Moline, IL 61265 for free literature. You're going to like what you see.

The 1200's 3-section 78-inch rake hugs ground contours closely with a choice of serrated or smooth blades.



Nothing Runs Like a Deere®



Sod cutter heavy duty

Wikco's Sod Cutter, a heavy-duty machine, mounts on tractors with category 0 or 13 point hitches.

Its cutting depth is adjustable from 3/4" to 2 1/2", and two blade sizes are available,

Model 300 comes standard with a 3-hp Briggs and Stratton engine. Model 300H comes equipped with a 3.5-hp Honda engine.

For a free catalog, contact Wikco Industries, Inc., Route 2, Box 154, Broken Bow, Neb 68822; telephone 1-800-247-6167 ext. 734. **Circle No 188**

Groundmaster covers ground

The Toro Co. is offering a new product, the Groundmaster 580-D, whose high-capacity compact 80 horsepower turbo-diesel engine provides power for cutting up to 14.5 acres per hour while cutting a 16-foot-wide swath.

The 76-inch wheelbase allows for an 18-inch uncut circle without braking. Wide stance and short wheelbase for untraditional maneuverability and stability.

The outboard cutting units feature protection; in case the



operator misjudge distance and the unit strike an object, the wings will pivot away from that object.

Contact Commercial Products

Division, The Toro Co., 8111 Lyndale Ave. South, Minneapolis, Minn. **Circle No 189**

Lun-Din markets drainage structures

Lun-Din is a new high performance prefabricated drainage structure for subsurface drainage applications.

Designated LUN-DRAIN PRO 80, it consists of a waffle-like polystyrene core with low "creep" characteristics and compressive strengths exceeding 5000 psf. The core is wrapped with a high performance polyester 8 oz. needle punch nonwoven filter fabric. The filter fabric is wrapped tightly around the core, and hot melt sealed, using two glue bead lines to insure a high strength drain.

Flow rates exceed 18 gallons per minute per foot width of drain at 1 psi (approximately 2 feet of installed depth), and is available in widths of 4, 6, 12 and 18 inches.

Recent installations have been in bunkers and nursery green at Carolina Country Club, Raleigh. Lundin & Co., Inc. P. O. Box 2445 Charlotte, N. C. 28211.

Circle No.190

Otterbine offers many capacities

The Otterbine Power Control Center is available in capacities from 115V single-phase to 460V three-phase.

Designed specifically for Barebo, Inc., by Westinghouse, the Control Center provides built-in protection from phase unbalancing, power surges, low voltage and spikes, and is UL, CSA and ETL safety-tested.

Each Control Center is a NEMA 3R weather-resistant combination starter equipped with a hand-off automatic switch and 24-hour operational timer.

Contact Barebo, Inc., P. O. Box 217, Emmaus, Pa. 18049. **Circle No191.**

Lakos' flow rates bettered

The manufacturer of Lakos centrifugal-action sand separators introduces the plastic IL-K series.

Designed to accommodate flow rates of 4 to 105 U. S. g.p.m (1-24 m/hr), IL-K's remove 98 percent of all sand and grit mesh (74 microns) or larger from private wells, irrigation water and other small, fresh-water systems.

Approaching the strength of steel, Noryl plastic is both heat and pressure-resistant, ideally suited for injection-molded plastic separators.

The separators offer protection against plugged spray nozzles and excessive nozzle wear, causing possible turf damage.

Contact Claude Laval Corp., 1911 North Helm Ave. Fresno, Calif. 93727; telephone 800-344-7205, in California 800-742-1850. **Circle No 192**



Bunton offers new 12.5 horsepower engine

Bunton Co. is offering the new 12.5-horsepower Onan engine on its 61-, 52-, 48-, 36- and 32-inch heavy-duty commercial mowers.

The technically advanced design of the Onan engine features overhead valve technology that provides mower power and better fuel economy.

Bunton says hillside mowing performance is improved with a positive-displacement oil pump that provides full pressure lubrication for longer bearing life.

The Onan 12.5-horsepower engine is also



available through Bunton dealers as a replacement engine for other mowers.

For more information contact Bunton Co. P.O. Box 33247, Louisville Ky.; telephone (502) 966-0550. **Circle No 195**

Kubota unveils new G-Series tractors

Kubota feels it has set a new standard of grass cutting with its new G-Series tractors. All three models - the G1800, G1900 and G2000 - come with standard steering or new four-wheel steering (4WS) system.

This feature allows for smoother, tighter turning than a conventional garden tractor and is ideal for mowing around trees and obstacles. An uncut circle of just 1.6 feet in diameter is made possible by the 4WS.

Both the G1800 and G1900 are equipped with liquid-cooled diesel engine, providing 16 and 18 horsepower, respectively.

These new models offer improved durability and maneuverability and feature a semi-flat operator's deck for comfortable

operation. Hydrostatic transmission is standard.

For mowing in open areas or long distances, the G-Series models offer "cruise control." The operator presses the HST foot pedal, adjusts speed with the speed set lever and steers without using the foot pedal.

The shaft driven mid-mount mowers and grass catcher is easily attached and detached. Mowers are available in 48-, 54- or 60-inch sizes. The grass catcher blows clippings into three rear bags with a combined capacity of 9.75 bushels.

Contact the Kubota Tractor Corp. 550 West Artesia Boulevard, Compton, Calif. 90220. **Circle No 196**

Improved formulation... washes off easily.

Because accuracy counts.

For accuracy when spraying, put Tracker in your tank. It's the most concentrated liquid indicator dye you can buy.

See where you spray while saving time, product and money. Environmentally safe Tracker eliminates skip and overlapping, indicates drift and helps detect clogged spray nozzles.

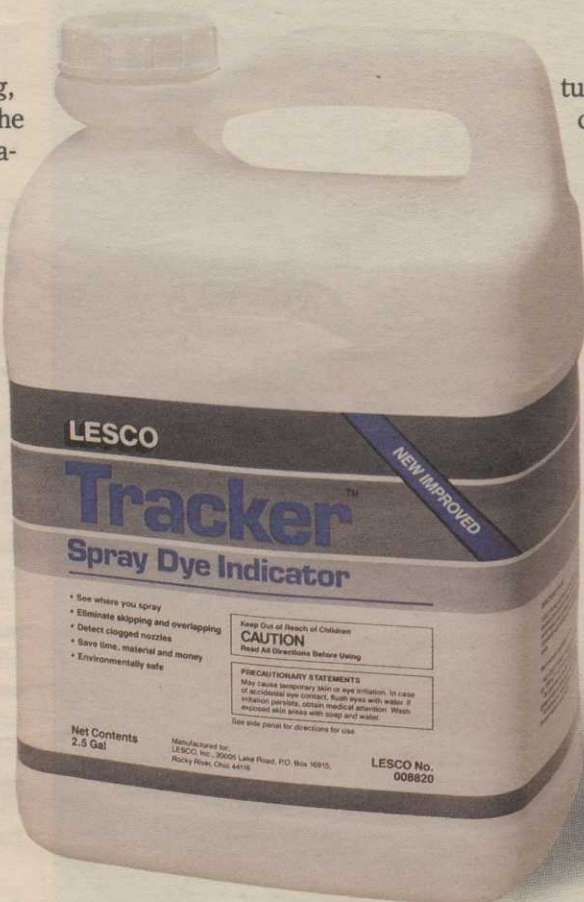
Completely inert formulation won't react or interfere with product being applied. And new improved Tracker now washes off easily.

Whether you are spraying acres of fairways, renovating

turf areas or treating home or commercial lawns, choose Tracker. Because accuracy counts.

Put Tracker in your tank today. Contact your LESCO sales representative, visit the nearest LESCO Service Center or call us toll free.

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Satisfy your passion for perfection!
Insist on the very best. Dress your
Tees and Greens with the classic
elegance of Par Aide.



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For Free Information Circle #129

XL™ EXCELS

For longer-lasting, broad-spectrum weed control, excel with XL™

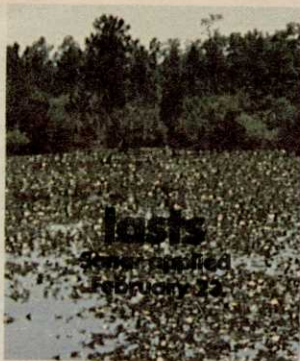


To apply granular XL is to excel in your weed control.

With just one application, you can keep your ornamental and landscaped areas free from many grass and broadleaf weeds for six to eight months.

And because XL contains Surflan®, your control's also stronger than Ronstar® against crabgrass. And just as strong or stronger against many other weeds. At less cost, too. For details, call toll-free: **1-800-352-6776**.

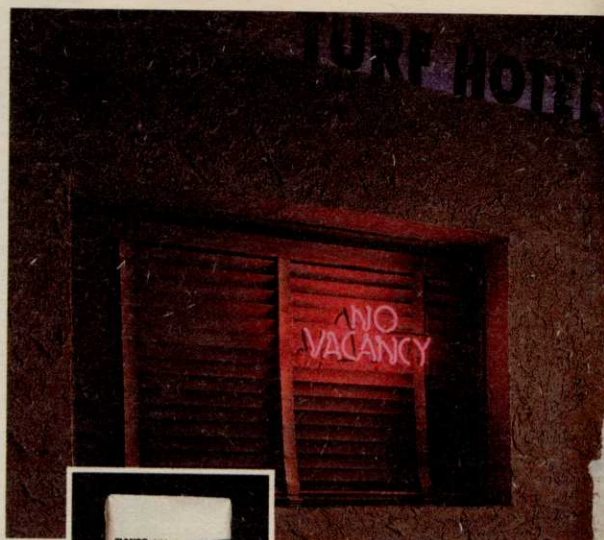
Sonar® weed control...



Sonar clearly tells its own story. With season-long aquatic weed control that other aquatic herbicides cannot deliver. Sonar targets specific plants like water lily, hydrilla, duckweed and many other weed problems. And controls them all season long whether you apply before they come up or after.

Unlike other aquatic herbicides, the Sonar label doesn't restrict swimming, fishing or drinking. So restrict your aquatic weeds, not your aquatic use. Try Sonar. And weed out your water without the worry. For details, call toll-free: **1-800-352-6776**.

With Team™ on your turf, weeds won't check in for 20 weeks.



Sorry, crabgrass. Sorry, goose grass. You won't be checking in here this season. Not on turf areas treated with Team™ preemergence herbicide.

Only one group has reservations. Your turfgrass. Even bent-

grass can relax, Team is that gentle.

That means you can take a 20-week vacation from weeds. From disgruntled golfers. From callbacks. And costly reapplications.

Team is widely available on dry fertilizer from leading formulators, and in granular form from your distributor.

So if weeds are planning to visit your turf this season, tell them sorry. You've booked Team for the season. See your Elanco distributor. Or call toll-free: **1-800-352-6776**.

Spray herbicide directly over the top of your established shrubs and ornamentals? Go ahead. Surflan® lets you spray with complete confidence.

All you'll see are the bright colors of your landscape or lawn. No crabgrass. No oxalis. No chickweed. And no prostrate knotweed and 50 other grasses and weeds, either. You won't see them for six to eight months, in fact, when you spray Surflan preemergence herbicide.

You'll also see Surflan is more stable on soil surfaces. It'll wait three weeks for water. Then it stays put,

even in heavy rainfall, to provide outstanding weed control. Yet it's gentle enough to spray over the top of 175 different ornamentals.

So go ahead. Fill up with Surflan and take your weed control where you never thought possible. Over the top of your ornamentals without injury. See your Elanco distributor. Or call toll-free: **1-800-352-6776**.

Elanco Products Company
A Division of Eli Lilly and Company
Lilly Corporate Center
Dept. E-455, Indianapolis, IN 46285, U.S.A.
Surflan®—(oryzalin, Elanco)



"I can control weeds three times longer just by adding Surflan® to my Roundup®."



Surflan. Roundup. Mix them together, and you've got control that knocks weeds down and keeps them down. Three times longer, in fact, than Roundup alone.

That's what landscapers all across the country are now finding. They're getting better weed control and more satisfied customers. And they're saving time and labor costs because they're applying just once.

With a Surflan/Roundup tank-mix, you get complete control of over 50 different weeds—including such tough species as crabgrass, barnyardgrass, chickweed, spurge, johnsongrass and foxtail. And Surflan won't harm your nearby landscaped areas, either. It works with little or no lateral movement.

For details, see your Elanco distributor. Or call toll-free: **1-800-352-6776**.



Take your weed control where you never thought possible.

For Free Information Circle #130

Surflan®—(oryzalin, Elanco)
XL™—(benefin + oryzalin, Elanco)
Team™—(benefin + trifluralin, Elanco)
(Refer to the XL and Team labels for complete use directions.)
Sonar®—(fluridone, Elanco)
Ronstar® is a registered trademark of Rhone-Poulenc.
Roundup®—(glyphosate, Monsanto)