Bay area courses recovering

Irrigation systems, greens major victims of quake

BY MARK LESLIE

In the aftermath of an earthquake that turned some San Francisco area communities upside down, Northern California golf course superintendents braced for the predicted next trembler and worked to get their courses back in shape.

While the nation's eyes focused on the deadly tragedy at the Bay Bridge, nearer the epicenter 50 miles to the southeast, Santa Cruz's downtown was leveled and some people's lives permanently changed. Lost in the tumult of more important matters was the Oct. 17 earthquake's effect on the region's golf courses.

The major problems at the courses were damage to clubhouses and other structures, breaks in irrigation systems, cracks on greens and putting surfaces, and even missing greens or bunkers.

Continued on page 28

Flymo makes triumphant return to U.S.

BY PETER BLAIS

Largely banished from U.S. golf courses in the mid-1980s, the Flymo mower is making a triumphant return heading into the 1990s, thanks to a safety device developed by a Florida distributor.

The Flymo, a walk-behind mower that rides on a cushion of air, has long been one of the most popular means of grooming around bunkers. But injuries have often occurred because of severe conditions and operator carelessness, according to Precision Small Engine Co.'s Andy Masciarelli, one of Flymo's major U.S. distributors.

"People would slip while working along a

Continued on page 24
Yamaha knows the purchase price of your fleet is just the beginning of the cost of ownership. So we design in features that keep your rental time up and your operating costs down. • Quiet and clean-running, our 4-stroke overhead valve engine accumulates carbon less easily. A 3-stage air filter locks out dirt, requiring less frequent service checks. Timing adjustments are unnecessary thanks to our Transistor Controlled Ignition system. Even our suggested maintenance schedule requires less downtime than the competition. • All this adds up to more time on the course making you money, less time in the shop costing you money. So call 1-800-447-4700 for the Yamaha dealer nearest you. And see how easy it is to keep your fleet profits on course.
Campbell, Corbin get Graffis awards

USGA official, teacher cited for contributions

The National Golf Foundation’s highest honors—the Herb Graffis and Joe Graffis awards—have been presented to former USGA President William C. Campbell and LPGA teaching professional Kathy Corbin, respectively.

The awards were named for brothers who founded the NGF. The Herb Graffis Award recognizes “long-time and outstanding contribution to preserving the true spirit of the game, and specifically for keeping golf as it was meant to be: for recreation, good fellowship and health.”

The Joe Graffis Award honors “outstanding service and dedication to the educational advancement of golf.”

Campbell has been involved in amateur golf for half a century. In 1956 he received the USGA’s highest honor, the Bob Jones Award, for distinguished sportsmanship in golf. In 1963, the Golf Writers’ Association of America gave him the William Richardson Award for outstanding contributions to golf.

“Of course I’m highly honored by this award, both for its stated criteria and because of its previous recipients,” said Campbell in a recent letter to NGF Chief Executive Officer Dr. Joe Beltz.

Campbell was president of the USGA in 1982-83 and served two terms on its Executive Committee. He was captain of the Royal and Ancient Golf Club in St. Andrews, Scotland, from September 1987 to September 1988 — only the third American accorded this honor.

The winner of 30 amateur golf titles including the 1964 U.S. Amateur Championship, he is a popular speaker on the history and traditions of golf. He is currently running his insurance company in Huntington, W.Va.

Corbin has worked extensively teaching the physically challenged at Palo Verde Golf Course in Arizona.

A world-class hurdler when she developed a rare disease of the kneecaps, she took the advice of her doctor and took up golf, winning a scholarship and earning a career as LPGA Teaching Division professional.

“I was devastated when I found out about my disease,” remembered Corbin, who was told when diagnosed at age 17 that she would likely be in a wheelchair by 30. “I was a very active person. My goal was to be a world-class runner and go to the Olympics. Suddenly that wasn’t possible.

“Now I can say my disease was one of the best things that ever happened to me. It got my life going. Finding out what people can and can’t do makes every day a new learning process. Her own use of golf as an adaptive therapy gave Corbin the impetus to found the “Never Say Never” program in 1985 for paraplegics, amputees, stroke victims, the blind and the deaf. Through her program, students receive individual instruction and equipment modified for their use.

In 1986 Corbin received the Phoenix Outstanding Rehabilitation Teacher of the Year Award for her work with a 70-year-old stroke victim. At the time she began the program, Corbin’s student was unable to use the left side of his body. Today, he not only takes a full swing but he plays a minimum of three rounds of golf a week.

“Letting someone see what it feels like to produce results on his own rather than depending on someone else is a real thrill. I keep catching people saying, ‘I never do that. But they prove themselves and me wrong over and over again. That’s my reward.’

Corbin joined such Joe Graffis Award-winners as Patty Berg and Bob Toski, when she accepted her award Nov. 20 at the LPGA Awards Luncheon in New York.

Campbell joined the likes of Arnold Palmer and Jack Nicklaus when he received his award at an International Association of Golf Administrators meeting Dec. 3.
Acres will remain green space — a lot. Without getting lawyers involved, Hahn is asking the other companies that are making and naming mowers Verti-Cut, Verticut or Verti-Kut to cease and desist.

Kent Hahn of Hahn said: “Verti-Cut has been a registered trademark of our company since the early '70s. It’s a mowing machine with blades that cut vertically ... to thin out running-type turf, dethatch or prepare seed beds. Now Verti-Cut has seemed to become generic, and we don’t want that to happen.”

Hahn said he doesn’t want to go to court to protect his rights. Rather, he said: “People in this industry are honest enough and good enough so that you don’t have to get the law involved... Most of them don’t know they’re using a registered tradename; they think

**Park District takes over Golden Acres**

The Schaumburg (Ill.) Park District has forcibly acquired the 205-acre Golden Acres Country Club from owners Curt and Phyllis Kotel.

Park officials maneuvered the $15.5-million purchase largely because of proposed state legislation that would have given counties, rather than local park districts, first shot at condemning golf courses and therefore forcing their sale.

The purchase ensures Golden Acres will remain green space “forever,” said park board President Marge A. Connelly.

Connelly said the district tried to negotiate with the Kotes to give Schaumburg Park District first dibs on the course, but the Kotes refused.

Park leaders are promising a variety of improvements at the course, which has been renamed Schaumburg Golf Club.

**36-acre razed site faces transformation**

G and R Contractors Inc., of Glenbeulah, Wis., plans to raz two buildings covering 36 acres in West Milwaukee and build a nine-hole golf course on the site.

The buildings of the former Babcock and Wilcox steel pipe and drilling equipment plant at S. 37th St. and Verti-Kut to cease and desist.

Babcock and Wilcox, steel pipe and marine Corp.”

Kinkead hasn’t contacted National Mower Vice President John Kinkead.

Kinkead said his firm checked the Verti-Cut name when it named its unit Verti-Kut. But, he said: “Ours is basically a heavier unit than theirs. Ours are PTO units, much bigger, with a 11 1/2-foot-wide cut. Theirs are 18-inch walk-behind units.”

Hahn had also not contacted Kubota or Ransomes about renaming their mowers.

But patent engineer David Gould of Bangor, Maine, warns, “If they don’t police their trademark they’ll lose it. Look at thermos and aspirin. Their owners slept on their trademark rights and lost them.”

Gould said a product violates trademark rights if it even sounds like the protected name. Protecting the trademark just involves writing a letter to the offending company asking it to stop using the name or to attribute it to the trademark holder, he said.

**Verti-Cut firm in ‘generic’ battle**

By Mark Leslie

What’s in a name? To the original Verti-Cut mower manufacturer — Hahn Inc. of Evansville, Ind. — a lot. Without getting lawyers involved, Hahn is asking the other companies that are making and naming mowers Verti-Cut, Verticut or Verti-Kut to cease and desist.

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Verti-Cut’s generic... But we are going to protect our name.”

Companies using that name include Brouwer Turf Equipment Limited and Ransomes, both of which make mowers called Verti-Cut; National Mower with its Verti-Kut; and Kubota with Verticut.

First on Hahn’s list was Brouwer Turf Equipment Limited, a Ransomes subsidiary. Brouwer, which has manufactured Verti-Cut for nearly six years, responded by pulling all its Verti-Cut advertising and press releases and is in the midst of a new advertising campaign using the generic Vertical Mower, said Advertising Supervisor Lawrence Cooper.

“It’s a nuisance,” Cooper said. “Fortunately, we were in the middle of changing the advertising anyway, since Ransomes bought Cushman and us from Outboard Marine Corp.”

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CHIPCO® brand 26019 fungicide delivers unsurpass...
Daiichi to upgrade Lakeover

Daiichi America Real Estate Corp., which bought the former Lakeover Country Club in Bedford, N.Y., for $24.5 million, plans to turn it into a world-class golf course by 1991.

Lakeover, now Whitfield Golf Course, became Daiichi's first golf course in the United States when it bought the property in mid-September from Whitfield Development Corp. of Norwalk, Conn.

"The immediate plan is to redesign and improve the golf course," said Douglas Danzig of the Park Avenue law firm Marks, Murase & White, which represents Daiichi. "They're willing to spend as much as it takes to rebuild the course. It will be a world-class, top-notch golf course" by the spring of 1991. It is the second sale of a northern Westchester property to a Japanese firm this year involving golf course plans. Mitsui Pudosan Inc., a Tokyo real-estate company, bought 229 acres from the Lincoln Hall school in Somers.

McCumber, Goodkin form partnership

McCumber Golf and Goodkin Research Corp. have formed McCumber/Goodkin Golf Group, focusing on public play and semi-private golf facility opportunities.

McCumber President and Chief Operating Officer James L. McCumber announced for joint venture between his firm and Goodkin, a real-estate research firm.

The new business will cater to all facets of the golf industry from feasibility analysis, design and construction, financing and investment to golf course management, club operations and course maintenance.

"It is our combination of skills, experience, knowledge and market presence," McCumber said, "that allows us to identify economically under-utilized existing courses or new developing opportunities, determine whether to construct a new golf facility or reposition an existing facility, and how to manage all phases of a program to ensure that economic return is optimized."

Goodkin Research Corp.'s sister corporation, Goodkin Real Estate Investment Services, Inc., assists in joint ventures, equity and debt financing and real-estate risk management.

Tortoise endangers Utah project

Designation of the desert tortoise as an endangered species has endangered plans for a golf course community in St. George, Utah.

Utah Bureau of Land Management officials have reported that the site for the project contains an average of 100 desert tortoises per square mile — "among the highest (densities) in the Mojave Desert."

Desert tortoises in Utah, Nevada, California and parts of Arizona were designated as endangered this year after biologists discovered many were dying from a respiratory disease.

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Safe holidays wished for all

My recent November travels took me once again to Southern California where I found the norm for that part of the country... beautiful weather, nice people, good business climate and, it seems, more cars than people. It took me 45 minutes to plod 20 blocks along Wilshire Blvd. one afternoon.

I did have the pleasure of visiting a magnificent new facility in the Westlake/Thousand Oaks area. Sherwood Country Club (so named because the area was the locale for the original Robin Hood movie) has been carved out of mountains and canyons that are spectacular in this part of the country. It took millions of dollars to develop this property before the first fairway was graded. David Murdoch and company have created a premier property. Many of the property's ancient oaks were transplanted to make way for the course, which is another Nicklaus sensa
tion. I noticed many huge oaks that were wired for stabilization af
ter being moved. Rushing creeks wind throughout the course creat-
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As Golf Course News winds up its first year of publication, I simply want to thank our readers and advertising clients for the over-
whelming response to our new publication.

To you and all those who have contributed to our initial success, have a safe, peaceful and happy holiday season.

Sincerely,
Charles E. von Brecht
Publisher

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Classic Quality from Tee to Green

Golf Course News

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Golf Course News
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Belle Perennial Ryegrass
Haga Kentucky Bluegrass
Ask about our Symphony and Trilogy Perennial Ryegrass blends!
LETTERS

He said it

'God makes golf courses and men find them. We've just found one.'
— Edgar D. Airey Jr.
Developer on proposed Greystone CC near White Hall, Md.

Ancient village spoils plan

A major archaeological find has forced planners to abandon plans to build a golf course in O'ahu Valley on Hawai'i's Waianae Coast. Archaeologist Bertell Davis, who was commissioned by the potential developer, Alpha Kai Corp., discovered the remains of an ancient Hawaiian village in February.

Davis, of the International Archaeological Research Institute, said the find is "one of the most significant prehistoric coastal Hawaiian villages ever to be discovered on O'ahu." A spokesman for Alpha Kai, which is owned by Japanese financier Yoji Takahashi, said the company has not made alternative plans for the property but "any plans would be compatible with the preservation of the archaeological sites."

Antioch being renovated to former self

The golf management firm GreenVisions, Inc. has begun extensive work to return Antioch (Ill.) GC to its former caliiber.

More than $1 million has been budgeted for the facelift and improvements to the public course which are targeted for May completion.

Antioch Golf Club, now owned by William Smith Jr., Randall Bus and Daniel Regan, was formerly called George Diamonds and later Harbor Ridge.

Restoration will include new landscaping and rebuilt sandtraps, tee boxes, greens and bunkers as well as redecorating and refurbishing clubhouse rooms and grounds.

The course will remain open during the work.

Carlton Oaks work complete

A $5-million facelift to Carlton Oaks Country Club in Santee, Calif., is finished, complete with two new lakes and 35 new traps and bunkers.

Dye Designs Inc. of Denver, Colo., moved 550,000 cubic yards of earth in recontouring the fairways and greens in the one-year project. The contractor also cut down around 100 trees.

Honolulu-based ophthalmologist Dr. Allan Kunimoto and several associates bought Carlton Oaks for $5.5 million in 1987 and hired Dye for the work.

Calendar raises money for MS

A 1990 calendar, "The World of Golf," has been produced by Mercedes-Benz of North America for the National Multiple Sclerosis Society.

The 14-1/2- by 22-inch calendar takes an historical look at the game. It can be bought from MS chapters and by mail from the National Multiple Sclerosis Society, 205 East 42nd St., New York, N.Y. 10017; 800-666-PUTT. It costs $35.

Grand Prix helps 'Wish' fund

Golf Cars Ltd. will sponsor the second annual Melex/Sun Cities Grand Prix in March in Phoenix, Ariz., to raise money for the Make-A-Wish Foundation.

About $6,500 was raised at the inaugural event this year by the race which featured media personalities as drivers and Sun Cities residents as navigators.

The race will coincide with the Phoenix Grand Prix.

Carmel has facelift

The three-year, $2.5-million renovation of Carmel Highland Resort Golf Course is complete, having opened along with the $45-million golf and tennis resort in Carmel Mountain, Calif.

Three new holes were built and three were redesigned on the 6,500-yard public course. The resort is managed by the Dallas-based Signet Hotel Corp.
Francis clan makes impact on American golf

BY BOB LABBANCE

Necessity was the mother of invention for Manuel L. Francis, and his ingenuity became the father of innovations that have helped golf course superintendents for decades.

Now retired and a spry 86, Francis first turned his progressive nature toward grasses—and the lustrous and hardy Vesper Velvet Bentgrass—and later built a machine that vertically sliced turf and has since become a universal piece of equipment.

Francis' intriguing story began in 1903 when he was born aboard a Brazilian steamer en route to Portugal. He would spend his first 16 years in Louzain, and work for his grandfather, Joe Lopes Carvalho, who prepared farms for cultivation and operated a construction business building houses.

"Manny" came to America in 1919 with many skills but little knowledge of English. He worked skinning fur in Danbury, Conn., saved some money, and adjusted to the States, but longed to return to outdoor work. He got his chance when a Mama-ronceck, N.Y., developer was hiring workers to build a series of courses for Donald Ross. Manny turned his talents with plants, irrigation and heavy equipment into a foreman's job.

"I learned so much right away. I was lucky, I always seemed to hit the spot," Manny said, referring to his good luck in American golf.

Manny is still fortunate, but remains very modest about his contributions to golf course maintenance.

A pride in doing things right and his quiet modesty have been passed on to his son, Manuel N. Francis Jr., who is 53, a renown superintendent in his own right, and operates Green Harbor Golf Club, their successful public layout in Marshfield, Mass. Manny N. was superintendent at the prestigious Boston Country Club and a national director of the GCSAA before he and his father bought their property on the south shore of Boston and started a turf nursery in 1965. Green Harbor's 18 holes opened in 1971. He and his wife, Judith, have a son, Manny Jr., and daughter, Kerry.

Manuel N. Francis Jr., 22, is a business major at New England College in Henniker, N.H., and plays number one on his golf team. He has worked in all phases of operations at Green Harbor.

The elder Francis was forced to learn many of those same lessons when the Great Depression hit in the 1930s. New course construction dried up and Manny and Shirley moved to South Portland, Maine, to work for the Maine (Maine) Municipal Golf Course.

"My wife and I, we did everything there, just the two of us. Ran the clubhouse, keep the course, manage the business. It was a tough time," he said.

A lifelong interest in plants started Manny experimenting with German bentgrasses. "I always picked up plants as a kid. I'd take them apart, study them and learn about them.

"Back then, you couldn't read it in a book like today. Greenskeepers always have to read the plant, because the soils don't talk," he said.

It wasn't until 1948, when he moved to Vesper Golf Club in Tyngsborough, Mass., that he named the grass he had cultivated. "Vesper Velvet Bent is a dwarf mini-creeper, a strain that I propagated through selection for its winter hardiness. No other grass will withstand the low cutting that my Vesper will. In comparison to other creeping bentgrasses... it doubles and triples its stems and blades.

The result, is a luxurious carpet of grass that accepts an incoming iron shot like a velvet pillow but puts lightning quick when shaved down. The deep green blades stand up straight even at low levels, unlike the creeping bentgrasses that lie flat and often produce grain on a putting surface.

From its start at the enchanting antique golfing grounds at Vesper, Manny's emerald green grass found its way to more than 50 courses in New England from Val Halla in Cumberland, Maine, to The International (with its 7,400-yard tiger tees) in Bolton, Mass., to Cochecho, Manchester and Lake Sunapee, three of New Hampshire's finest private clubs.

Manny also brought the grass to Mexico during repeated visits there from 1954 to 1970, and Vesper Velvet is alive and well on courses from Alcapulco to Mexico City. It is kept growing in New England by Bert Frederick, the superintendent who learned from Manny at Vesper, and who still cultures the grounds there.

Francis' innovations in turf care have naturally followed his desire to serve the golfing public with better facilities. His lack of patents or need for credit are a throwback to an earlier era when information was shared for the good of the game, not the individual. He consulted for more than 50 courses in New England, usually gratis.

When he watched ice and snow destroy putting surfaces during the Northeastern winters, Manny took heavy equipment on the greens and plowed them off in early March. At first this was considered crazy, but winterkill was cut drastically, and Vesper was in play before other nearby layouts. This was in the 1940s.

At a time when greens were top-dressed with loam if anything at all, Manny was experimenting with sand. He found the low-growing grasses spread more readily and the greens held up better to heavy traffic.

When he needed a machine to allow the fertilizer to assimilate into the surface he built one. He inserted flat, carbon steel blades into a round wheel that was sent spinning at high revolution; vertical slicing was born. In the post-World War II era this was revolutionary, today the practice and the equipment are universal.

His son tackles problems with the same forward-thinking independence and lack of restraint due to what is already available. He needed a driving range at Green Harbor but didn't have 3,000 square yards. The solution is an enclosed cage with 10 mats and a layered screen that drops the balls straight down into a trough. The floating Mac-Tec golf ball is used, and a gush of water floods the depression every 10 minutes, whisking the balls away and into the building, where they are collected and fed back into the ball dispenser. Although interest has been aroused elsewhere, the range remains a practical solution to specific problem for the golfers at Green Harbor.

The Francis family designed and built every bit of this busy and beautiful public facility on a former cranberry bog on a piece of land once owned by Daniel Webster.

Riding carts are not permitted, and pesticides are seldom used. Not a blade of grass is out of place despite nearly 50,000 rounds a year—many by less proficient devotees toting mis-matched collections of clubs, and sporting t-shirts and dungarees.

When asked if his father had regrets about not doing more for himself over the years, Manny N. Sr. was quick to reply in the Francis style: "No, he's never been like that. Look at these people having fun out here. What he sees is satisfaction enough for him."
NEW COURSES

Bates' Utah course 'spectacular' sight

Nestled among the desert mountains and laid out around two lakes, the Gene Bates-designed Washington Green Spring Golf Course in Washington, Utah, opened for play in mid-November.

Bates hopes the 6,742-yard, par 71 course, in the southwest corner of the state, will be one of the finest municipal 18's in Utah.

It winds around the two lakes and across several ravines that bring into play a spectacular mountain backdrop. Bates also used the desert surroundings as a strategic element of play.

In December 1988 on 150 acres of land donated to the city of Washington by Redlands Corp. and Desert Mutual Investment, Redlands principals and Nels Clayton plan major commercial and residential developments next to the course.

Sun City Center project surpassing 100 holes

When nine Ron Garl-designed holes open at Cypress Greens in January, Sun City Center, Fla., will "break 100," with 108 golf holes.

Cypress Greens, which already has 18 holes, will offer 27 including the newest nine which plays at par 36 over 3,193 yards.

Sun City Center Corp. Senior Vice President Charlie Brasington said the firm already has plans for another 18-hole executive course at the site, which is one of the largest self-contained retirement communities in the country.

Garl, who has designed other layouts at the project, features church pew bunkers, split-level fairways, terraces and beach bunkers in this course. It was configured around, through and over environmentally sensitive areas.

Sherwood Country Club wins Nicklaus' raves


Nicklaus and Greg Norman played a course-opening round on Oct. 30 at the 7,025-yard course, the centerpiece of an exclusive residential community. The course then hosted the inaugural Ronald McDonald Children's Charities tournament on Nov. 17-19.

"Sherwood is one of the outstanding golf courses in the United States — a magnificent piece of land, so private — with so much natural beauty," Nicklaus said, adding that the day it opened it would "look as if it's been there for 100 years."

The course stretches along Sherwood Lake and a stream flowing from it. Developer David Murdock was committed to preserving the Santa Monica mountain locale by moving and replanting hundreds of mature oak trees that were found on the original site.

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### New courses being planned in U.S.

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From Golf Course News sources.

### Floating green reality in Idaho

The Coeur d'Alene Resort Golf Course, a lakeside, 6,500-yard, par-71 layout in northern Idaho, designed by Scott Miller Design Inc. of Scottsdale, Ariz., is scheduled to open in spring 1991.

The course's signature hole will be a first-of-its-kind 16,000-square-foot floating island greensite set offshore in Lake Coeur d'Alene.

The green on the par-3 hole will be moveable and the length and position of the hole will change daily to one of seven predetermined locations.

Boats will ferry golfers to and from the island green, which is surrounded by a sand-trap and landscaped with thousands of red geraniums.

The lake will also serve as the landing area for a practice range stocked with floating golf balls. Fairways will be bentgrass and the course will require extensive tree planting and landscaping.

The Miller firm is also working on two private 18-hole courses in the Los Angeles area, a 27-hole resort facility in San Diego, Calif., and one in Lenexa, Kansas and one on the Kona Coast of Hawaii.

Also, the firm designed an interesting 18-hole, bentgrass putting course in Mission Viejo, Calif., for the J.M. Peters Co. That project is a scaled, strategic miniaturization of the Old Course at St. Andrews and is scheduled to open soon.

### McCumber researches archives to restore MacDonald layout

Mark McCumber & Associates were sensitive to the philosophy of the original architect of North Palm Beach Country Club — Charles Blair MacDonald — in renovating the course, which has reopened for play.

The course was built in 1926 and designed by MacDonald and his assistant, Seth Reynor. McCumber Golf "adhered to MacDonald's strict design philosophies as close as possible with research efforts into the classical nature of MacDonald's designs through the museum curator" at USGA's Golf House in Far Hills, N.J., according to McCumber Golf Senior Vice President J. Christopher Commins.

The public, daily-fee facility was closed from April to November for the $1-million renovation.

Work included reconstructing the 65-year-old greens to USGA specifications and doubling tee space adding forward tees, Commins said.

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Courses must tackle disposal

Twenty percent of the trash in landfills is landscape waste, and as many landfills across the country close down, the golf course industry will have to find new ways to discard of grass clippings and leaves. With their landfills filling up quickly, more than 25 states have passed or are studying legislation to change the way people discard of their lawn waste. It is estimated that half of the 16,400 landfills in the United States will be closed by the year 2000. Creation of new landfills is slowed by strict and time-consuming licensing procedures.

States are encouraging homeowners and greenskeepers to recycle lawn debris rather than put it into plastic trash bags. Bob Tracinski, consumer information manager for John Deere, said, "People can distribute their grass clippings across the lawn most of the time. Just follow the One-Third Rule and mow the lawn often enough to remove only one-third of the grass blade."

Tracinski said short clippings deteriorate quickly and return nutrients to the soil. Experts estimate that a season's worth of grass clippings is equal to one application of a commercial fertilizer. While superintendents may worry about a buildup of thatch, Tracinski said thatch is more a product of shallow watering and over-fertilizing.

"Thatch is a layer of dead roots and stems," Tracinski said. "If it's over a half-inch thick, it can impede the flow of water and nutrients to grass roots."

Grass clippings also make good compost. Grass clippings also make good compost. Grass clippings also make good compost. Grass clippings also make good compost. Ground water contamination can be prevented by further research and education rather than costly regulation, the U.S. Senate Agriculture Subcommittee on Conservation and Forestry was told recently.

Dr. George Wallingford, East Central

Research, education key to ground water problem

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A huge body of knowledge and data already exists. It is critical that new research efforts not ignore earlier research, wasting time and resources duplicating programs and "re-inventing the wheel."

— Dr. George Wallingford

director of the Potash & Phosphate Institute, told the subcommittee that while incidents of chemical spills and leaking underground tanks have caused problems in some localities, they are site-specific problems and not indications of a national ground water crisis. The vast majority of America's underground drinking water is safe, he said.

He testified that while research will continue to play a critical role in identifying and correcting ground water contamination, existing data should not be overlooked.

"Industry, scientific bodies, universities, agricultural producers and federal and state agencies have conducted ground and surface water research in this country for more than a century," said Wallingford. "A huge body of knowledge and data already exists. It is critical that new research efforts not ignore earlier research, wasting time and resources duplicating programs and "re-inventing the wheel.""

Wallingford said new research should be integrated with existing science and coupled with industry and producer education to prevent ground water contamination.

Specific research objectives, he said, should:

• Develop less costly ground water sampling and monitoring techniques.
• Develop improved farm and ranch production systems using Best Management Practices to improve water quality without sacrificing farmer profits.
• Determine the extent and seriousness of potential agricultural contributions to ground water contamination.

Wallingford also told the subcommittee that agricultural fertilizers are often falsely accused of contaminating ground water when unsafe levels of nitrates are found.

Citing a recent survey that found that 2.7 percent of 14,000 drinking water wells in Ohio had nitrate levels exceeding water quality standards, he said, "Factors such as the age and depth of the well had a much greater effect on contamination than did the well's proximity to cropland."
International conclave

GCSAA expects 14,000 attendees at 61st show

Record attendance and trade show participation are predicted for the Golf Course Superintendents Association of America’s 61st International Golf Course Conference and Trade Show in Orlando, Fla., Feb. 24-26.

GCSA officials report that more than 70 new exhibitors have registered to display their lines. The total number is expected to be between 475 and 500, compared to this year’s 463.

Turf equipment and golf course maintenance products will be displayed during the trade show from Feb. 24-26 at the Orange County Convention Center, and a variety of lectures is planned for superintendents and golf course architects, builders and developers.

The 1989 conference and show attracted more than 14,000 from the United States and 39 foreign countries.

Sherwood Moore to be honored with Morris Award

Sherwood A. Moore, a past president and 50-year member of the Golf Course Superintendents Association of America, will receive its highest honor, the Old Tom Morris Award, in February.

The recently retired Moore, who continues to work as a consultant at The Captains Golf Course in Brewster, Mass., will join such luminaries as Arnold Palmer, Bob Hope, Patty Berg and Gene Sarazen when he is presented the award at closing ceremonies Feb. 26 at the 61st GCSAA International Golf Course Conference and Show in Orlando, Fla.

Last winter he was presented the GCSAA’s Leo Feser Award for best article written by a superintendent for Golf Course Management magazine.

The Old Tom Morris Award was established in 1982 to recognize individuals who have made outstanding lifetime contributions to golf. It is named in memory of Old Tom Morris, greenskeeper and golf professional at Royal and Ancient Golf Club of St. Andrews, Scotland, who was a four-time British Open champion, clubmaker, ballmaker and course architect.

Moore was superintendent at Winged Foot Golf Course in Mamaroneck, N.Y., from 1957-67, and at Whiting and Chapter Club in Darien, Conn., until 1980. In 1980 when Winged Foot was chosen to host the first Senior Open, Moore returned to get the course in condition.

In 1984, he left to join The Captains, and in 1987-88 he also served the USGA Green Section as acting agronomist.

ABC sports commentator and former PGA Tour player Dave Marr, a long-time friend of Moore’s, said, “Sherwood’s a great superintendent, sure, but he’s more than that. He is the kind of person I would assume young people at... all the fine turfgrass schools would aspire to be like.”

Bengeyfield, Watschke earn association’s citations

William Bengeyfield, U.S. Golf Association Green Section national director, and Dr. Thomas Watschke, Pennsylvania State University turfgrass researcher and educator, will be honored for their dedication and outstanding service to golf course superintendents and the golf community at the opening session of the 61st International Golf Course Conference and Show.

Bengeyfield and Watschke have been selected as recipients of the 1990 Distinguished Service Award. The selection was made by the board of directors of Golf Course Superintendents Association of America under Bengeyfield’s leadership, the USGA/GCSAA Turfgrass Research Committee has seen more than $2.8 million raised and distributed for research to develop turfgrass cultivars that will reduce water usage and maintenance costs.

The USGA Turfgrass Advisory Service, a consulting branch of the Green Section, has been an increasingly valuable resource for superintendents during Bengeyfield’s tenure as national director. Bengeyfield, a long-time GCSAA member, also operates and maintains Frankfort (Mich.) Golf Course.

For almost 50 of his 35 years with the Green Section, Bengeyfield has also served as director of the Green Section Record. Watschke is coordinator of Penn State’s Landscape Management and Water Quality Research Center, synchronizing all field research for the five departments that use the facility. He also serves on the Technical Resource/Advisory Committee for Golf Course Management, the technical and professional journal for golf course superintendents.

His research has led to the use of post-emergent crabgrass control compounds and advancement in broad leaf weed controls and, most recently, to a better understanding of surface run-off on turfgrass. Many of Watschke’s former students are turfgrass scientists, perpetuating and extending his commitment to turfgrass advancement.

Westchester pair win Feser

The Leo Feser Award, honoring the author of the best superintendent-written “Golf Course Management” article of the year, will be presented to Ted Henton, director of sports and grounds at Westchester Country Club in Rye, N.Y., and Mary Medosin, an assistant superintendent at Westchester during the opening session of the Orlando show.

“Employee Safety on the Golf Course,” which appeared in the April issue, won the prize.

Golf tournament

The GCSAA said more than 600 association members will compete in its Golf Championship Feb. 19-20 on five Orlando area courses.

Individual and chapter team honors will be contested.

The Midwest GCSA won this year’s competition and Myers Point Country Club superintendent Dave Powell of Charlotte, N.C., won his second straight individual championship.

Also, Sandra Gervais of The Graduate Club, Graham Laxton of Morris Award, the Old Tom Morris Award was Father's Day Country Club and Daniel J. Farrell of Cavalry Club.

The Club Managers Association of America has accredited seven people as Certified Club Managers (CCM).

Earning the accreditation were Sharon A. Burwash of Pecan Plantation Country Club, Dennis M. Ebert of Crestwicke Country Club, Catherine Evans of Heathdale Ridge Country Club, Daniel J. Farrell of Cavalry Club.

Also, Sandra Gervais of The Graduate Club, Graham Laxton of the 1989 conference and show.
ON THE MOVE

Club Car appoints Rivers v-p

Cary H. Rivers has been promoted from national sales manager of direct sales to vice president of sales and marketing with Club Car Inc. of Augusta, Ga.

Club Car President George Cary H. Inman, announcing the promotion, cited Rivers' work with the company since 1978 and described him as a "confident leader."

Rivers, who joined Club Car as a sales representative in 1978 in the East Florida Branch, moved to Orlando, Fla., to open a branch there in 1982. In 1984 he moved to Augusta in his national sales manager post.

Rivers attended Seminole Junior College and graduated from Florida State University. He was head golf professional for clubs in Florida and North Carolina for six years before joining Club Car.

Bergen heads PGM team

Paul Bergen of Atlanta has been named president of Professional Golf Management of Destin, Fla., a consulting and management firm also involved in buying and operating golf course properties.

Among Professional Golf Management's clients are developments in Georgia and Florida, as well as Osborn Properties of Birmingham, Ala.

Bergen was formerly vice president of operations at Reynolds Plantation in Greensboro, Ga., a 4,000-acre residential resort community with more than 26 miles of shoreline on Lake Oconee.

Reynolds has retained the services of Professional Golf Management and Bergen will remain involved in its ongoing operation and future development.

Bergen worked 13 years with Sandestin Beach Resort in Destin as director of golf, director of sports and resort manager. His experience in the golf management field also includes work with Chase Manhattan Real Estate Investment Trust, and Paul Underhill and Associates of New York.

Wolfrom moves to new resort

Bruce Wolfrom, who was course superintendent at Barton Hills in Ann Arbor, Mich., for 20 years, has been hired as superintendent at a resort course being constructed outside Gaylord, Mich.

Wolfrom will begin Jan. 1 at the facility which is being built by Sylvan Resort owner Harry Melling and is expected to open in 1992.

Wolfrom left Barton Hills to build a course near Ann Arbor, but he said investors dropped the project because of wetlands problems.

Ciba-Geigy expands staff with line

Ciba-Geigy has added 10 new positions in the turf and ornamental products division in an effort to increase customer service with an expanded product line.

"We entered the turf and ornamental market three years ago with the promise of strong support and a dedicated staff," said Bill Liles, director of the division. "The people we've added to our group provide us with a leadership position for the future."

Two former turf and ornamental sales representatives - Dave Warman and Jose Milan - have moved to headquarters in Greensboro, N.C., Warman as area sales manager for the southern region and Milan as a member of the marketing staff.

Nick Angelucci, Rick Grant, Chip Houmes and Steve Rezac have moved from the crop chemicals group to turf and ornamental as sales representatives. Don Spier, formerly with Turf Products Ltd., and Don Wilson, from ChemLawn Services Corp., have joined Ciba-Geigy's sales staff as well.

The additions have meant realigning regions for the eight existing sales representatives.

In addition, Liles said Dr. Don Taylor has been named a senior technical support specialist in the Southeast and Dr. Lisa Lemke has been appointed a technical support representative for the Northeast - both reporting to Dr. Doug Houseworth, technical support manager.

Taylor has been with Ciba-Geigy for 21 years, 13 as a senior scientist in field research in the crop chemicals group. Lemke joins the group from American Cyanamid, where she was a research entomologist.
Jacobsen promotes Whitehead, Pettifer

Jacobsen Division of Textron has named Ron Pettifer its regional sales manager for turf products in the Midwest sales zone and Wayne Whitehead its national sales manager in commercial products.

Pettifer is responsible for servicing Jacobsen turf distributors in Illinois, Indiana, Michigan, Missouri, Ohio and Wisconsin. He joined the company in 1985, serving as a dealer sales manager for commercial products and later as national sales manager in commercial products.

Whitehead is responsible for the promotion and sale of Jacobsen commercial equipment throughout North America. He previously served as the company’s dealer sales manager in New England and Connecticut.

Hope Plantation names Ritchie superintendent

Michael F. Ritchie has been named superintendent at the new Hope Plantation country club community south of Charleston, S.C.

Ritchie, 27, joined Hope Plantation earlier this year to help oversee construction, planting and grow-in of the course, which opened in November.

“I think this is going to be a very challenging golf course,” Ritchie said of the 6,843-yard, par-72 layout designed by Clyde Johnston.

“Every day, the course is going to be different, depending on the wind and the way we set it up. “We can set this course up to extremely difficult if we want to, or we can set it up to be playable and enjoyable. But either way, it’s going to be challenging.”

Ritchie, who holds a bachelor’s degree in agronomy from Texas A&M University, served two years as assistant superintendent at Shady Oaks Country Club in Fort Worth, Texas, and was a sales representative for a major turf and irrigation equipment manufacturer and a real-estate salesperson specializing in coastal goal properties.

The Fayetteville, N.Y., native is a member of the Golf Course Superintendents Association of America and the Carolina Golf Course Superintendents Association.

Video Magazines hires Morris

A pair of USGA employees have joined Video Magazines International, a new home cassette production company formed by ABC Sports and Jack Nicklaus Productions.

John Morris, the USGA’s director of communications since 1981, has been named president of the new company. Michael Dann, manager of the USGA’s Associates Program since 1983, will become vice president of advertising and marketing.

Headquartered in Liberty Corner, N.J., VMI will produce video magazines for home cassette use.

The company’s first magazine will be “Wide World of Golf,” which will have its first issue in January.

A 1963 graduate of Penn State University, Morris began his career as golf writer for the Baltimore Sun. He also served as sports information director at the University of Delaware for six years and at Penn State for nine years.

Dann, a 1971 graduate of the University of Illinois, also received a master’s degree and played on the Illini golf team. He worked for a variety of golf publications before joining the USGA staff. He was also director of public relations for Pinehurst, Inc. (1979-81) and served as executive director and tournament director for the World Golf Hall of Fame (1981-82).

Dossey joins FMC in sales

Farmers Marketing Corp. of Phoenix, Ariz., has appointed Brenda Dossey to its sales and marketing staff.

Dossey holds a bachelor’s degree in agronomy and plant genetics from the University of Arizona and has done graduate studies.

She has worked as owner and manager of Grand Canyon Seed Brokerage of Chandler, Ariz., and worked with Valley Seed Co. of Phoenix.

She will be responsible for special projects as well as sales and marketing at FMC.

Barcelona joins Germain’s

Tracy Barcelona, former area manager with Agricultural Pest Control, has joined Germain’s, Inc.’s turf seed sales staff in charge of the Southern California region.

Barcelona will work with golf courses, landscape contractors and municipality industries.

He has served as turf specialist/sales with Target Specialty Products and as sales representative with B. Hayman Co.

Barcelona holds a bachelor’s degree from California State Polytechnic University in Pomona.
Pebble Beach: Keeping a course's well-being

BY FRANK POLLARD

Seventy years ago, Samuel F.B. Morse, amid much fanfare on Washington's birthday, 1919, opened the Pebble Beach Golf Links — a venue that many feel is still the finest seaside course in North America and perhaps the world. Morse's vision was to create a one-of-a-kind golf course with unsurpassed scenic beauty and an element of difficulty that would always be challenged but never conquered.

Commissioning amateur golfer and architect Jack Neville to achieve this dream was either a stroke of genius or happy chance, but the results were a magnificent creation of fairways and small contoured greens that great golfers over the intervening years. Playing Pebble Beach today, the golfer negotiates those same unchanged verdant fairways and small contoured greens that became familiar to almost all the world's great golfers over the intervening years.

The course remains as Neville and Douglas Grant (who assisted Neville in its design) devised it. The course has remained essentially without major alteration during that period of time and the changes that have been made are minor in the overall scheme of things.

It isn't by accident that Pebble Beach is relatively untouched by time. It's been a commitment by, first, Samuel Morse and, following him, those who have worked diligently to make the golfing experience of those who have followed him, that of continuous mowing and other maintenance practices.

Advances in equipment are also allowing us to verticut greens quite often, and where we lightly aerify the soil, it goes back to its original design. The commitment of course officials is to be an innovative leader in providing their guests with a golfing experience on their course frequented by some 60,000 amateurs yearly.

In 1928, E. Chandler Egan strengthened bunkers on several holes prior to the 1929 U.S. Amateur. As time elapsed, a number of greens and fairways were altered slightly through continuous maintenance by greenskeepers and their crews.

Continued on page 17

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Pebble Beach's famous and picturesque 7th hole, as it was in the late 1920s, top. In the center photo, taken in 1973, and bottom photo, shot this year, you'll notice that the contour of the green has remained almost precisely the same. The bunkers have changed slightly over the years but have been brought slowly back to the original shape and size as conceived and designed by Jack Neville.

has put forth a very strong effort to develop maintenance practices that will ensure keeping the continuity of the course so that whether the golfer comes back next week, next year, or in 20 years it will look and be precisely the same as it is today, and was in the distant past.

"The commitment of course officials is to be an innovative leader in providing their guests with a golfing experience on their course frequented by some 60,000 amateurs yearly.

Norman says one of the keys to better maintenance practices is hiring well-qualified people who are career-oriented in turfgrass management.
When we experienced high incidences of seismic activity, we found that we were losing chunks of earth into the sea.

"We identified the weakest areas and installed riprap sea walls along the 17th and 18th holes to successfully control those areas of erosion. The cliffs along the 4th and 6th holes presented a different problem when we discovered that there was an interface between the parent rock base and the topsoil varying in depth between 14 and 29 feet beneath those fairways. The course ground water was percolating down through the earth to the rock below and then moving toward the cliff and adjacent sea making the earth above it very unstable," he says. The problem was solved by cutting a trench down to bedrock the full length of each of those fairways and greens (320 yards along No. 4 and 510 yards along No. 6), then installing an intercept drain and draining outlet exhaust drains from it into the ocean.

"It very nicely stabilized the earth and we've had no trouble with erosion since," he says.

"A tremendous amount of care is taken not to change a thing on the course. Whenever we plan to do anything to the golf course — whether it's a major project or just installing sprinkler heads, repairing cart paths, or trimming trees — we consult the archives that contain detailed records and photographs dating back to the very beginning," says Norman. "It is the philosophy and commitment of the Pebble Beach Co. to continue to maintain and improve the course, being very careful to preserve the integrity of the original design."

To safeguard this integrity, a series of yearbooks on the course is kept.

"Once a year we take pictures of the tees, fairways, greens and rough throughout the course and keep them in that year's book," Norman says. "In addition, anything we do to the course, no matter how minor, we also take 'before and after' photos as well as noting the reasons we did it and the costs. These also go into the yearbook where we are compiling a living record of the course, since it's a Pebble Beach record."

Continued on page 33
A view from a hill

Is what's good for TV, good for average golfer?

BY FRANCES G. TRIMBLE

The desire for "high drama" on the finishing hole at golf courses hosting major tournaments has instigated a major new challenge to architects and builders. A case in point is the Woodlands Tournament Players Course, located north of sprawling Houston, Texas.

The Woodlands TPC has been home to the Independent Insurance Agents Open (see Houston Open) for the last five years. The Bruce Devlin/ Bob Von Hagge layout opened for play 12 years ago and the area's PGA Tour event moved to TPC from The Woodlands North course shortly thereafter. For the first time in many years, the tournament's search for the finishing hole at golf courses layout opened for play 12 years ago and the area's PGA Tour event moved to TPC from The Woodlands North course shortly thereafter. For the first time in many years, the tournament's search for a permanent home seemed over.

Everyone was happy... for about 5 minutes. But a "Hey, Look Me Over" mentality — the urge to be counted among America's best (Top 25 Resort Courses, GOLF DIGEST, Oct., 1988), has sent TPC management back to the drawing board yearly since the move. The most recent alterations play to rave reviews from professionals, spectators, and daily fee golfers alike. Interestingly, nothing changed while everything changed.

In this regard, Richard Luikens — superintendent at the Woodlands TPC and two other on-property courses, describes a need to add more "high drama" to the finishing hole, without touching a blade of grass on the hole itself.

Houston Golf Association executive director Duke Butler wanted to create an area which would take the place of and eliminate the expense of erecting and tearing down bleachers which typically accommodated 1,000 spectators at #18 green. The PGA tour commissioner Deane Beman's opinion was that so many memorable shots had happened at #18 that changes to the hole itself might not be for the best," advises Luikens.

Truly, the 445 yd par 4, with water curling dangerously close to the green's front right edge, has been the scene of at least three dramatic finishes in recent years.

• Two-time U.S. Open champion Curtis Strange made a cross-country putt to defeat Cal Pettee in sudden death in 1986;

• Jay Haas made a long putt to go into extra holes in 1987;

• And in 1988, Curtis Strange birdied #18 to go into a playoff with Greg Norman; he then birdied 18 again to win. Strange said later, the heroic 3-iron approach during regulation gave him the confidence he carried to his first U.S. Open title.

The fat lady sang often and loudly at 18. Hence, it was decided that whatever additions were to be made, would be accomplished around the hole.

Superintendent Luikens says that Duke Butler took photos and measurements at TPC Sawgrass. "Those, and one aerial photograph, were all the specs we had to go on. But TPC Sawgrass was constructed from the outset with the stadium concept in mind. Whereas, TPC Woodlands was a development golf course that kept getting better over the years even though changes were limited to those which could be made in existing spaces."

In the case of the gigantic stadium mound which now sits at the rear of #18 green, that meant converting an existing hill, with an elevation of 12" to a mammoth pile of dirt triple that size with broad, flat areas on top and access stairs to the rear. To begin, crews cleared 9 rows of carved steps, 2' high, 3' wide, and around 120' long.

The work, done with a Caterpillar D-3 bulldozer, is similar to doing brain surgery with a lawn mower and Luikens says, "The operator didn't use anything but a measur ing device, except for eyeballing it." The D-3 has an articulated blade so the operator can cut any sort of pattern he wants even though his machine is sitting on a slope. However, one big consideration was drainage; we didn't want the water to sheet flow down to the green. Instead, the operator created a very slight grade from the center to each end to carry the water away from the green. It worked perfectly. The only other concern we had at this stage was that a summer rain not wash all the grading away before we had a chance to bulkhead.

Hurricane Gilbert, which was expected to ravage the upper Texas Gulf Coast, sent Luikens and his crew scurrying up the hill with thousands of square feet of plastic sheeting to "tarp" the notches after each day's work. However, the storm landed far south of Houston and work proceeded without a hitch. Bulkheading and stairs were added by another Conroe contractor who regularly builds decks and piers for area lakes homes. Irrigation was installed and the stadium area was sodded with Bermuda 419 in early October.

Richard Luikens says the various "jobs" each took longer than expected. "We tended to see each step as requiring less than it actually did. But for having only one aerial photograph and a few basic measurements to start with, I think we did a turnkey job and consequently we won't have to go back in a renegade. We were a little concerned about settling. But we had very few problems along those lines."

The stadium area was originally...
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The responsibilities of a golf course superintendent are many, but one of the most basic, and important, is turf fertility. Developing and maintaining a top-notch fertility program has always been an important prerequisite for a superintendent's success in growing and keeping quality golf course turf.

According to a cross-section of superintendents around the country, while much has changed in the use of fertilizers, much has remained the same. One common denominator of a well-planned and well-executed nutrient program is regular soil testing.

### Company Trade Names Region Course Area Liquid or Granular Particle Choice Micro-nutrients? Homogenous? Sulfur coated Fertilizer with H I F Contact

<table>
<thead>
<tr>
<th>Company</th>
<th>Trade Names</th>
<th>Region</th>
<th>Course Area</th>
<th>Liquid or Granular</th>
<th>Particle Choice</th>
<th>Micro-nutrients?</th>
<th>Homogenous?</th>
<th>Sulfur coated</th>
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The dominant trend in the past several years has been a dramatic reduction in the amount of applied nitrogen and an increased importance of phosphorus and potassium, according to professionals in the field. Explaining why, Dr. John Street, associate professor of agronomy at The Ohio State University, said, "The industry became more aware of the detrimental effects that high nitrogen levels can have. For example, more disease problems—like pythium and brown spot—especially in the summer and the fact that very lush, succulent turf is less tolerant to stress factors like heat and drought. Another negative was that the heavy nitrogen was doing nothing to create deep root systems."

Steve Gipson, superintendent at Fairlawn Country Club near Akron, Ohio, reiterated the reduced emphasis on nitrogen and growing importance of the other major nutrients. "We now fertilizer for the health of the grass rather than just color," Gipson said. "We're using substantially higher rates of potash — approaching the nitrogen levels used in the past. I would hope that the industry is getting away from the real high-analysis products that put down so much nitrogen."

Gipson also said lightweight fairway mowing has influenced fertilization. Continued on page 22

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<td>SM</td>
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<td>No</td>
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Because turf fertility is so vital, Golf Course News surveyed the companies manufacturing fertilizers for golf course use. Response to the more than 25 surveys mailed was excellent and much of the information is highlighted here. This chart tells each company's 1) trade names; 2) the region it serves; 3) the areas of the course its fertilizers are used on: T (tees), F (fairways), G (greens) and R (roughs); 4) if it makes liquid or granular fertilizers, or both (L, G, or Both); 5) if it makes more than one size particle in its granular fertilizers, and how many sizes; 6) if it offers fertilizers with microelements; 7) if it produces homogeneous or simple mix fertilizers, or both; 8) if its products are sulfur-coated, non-sulfur-coated, or both; 9) if it makes combinations of fertilizers with herbicides (H), insecticides (I) or fungicides (F); and 10) the contact person at the company whom a buyer should contact.
Continued from page 21

"Because we are now maintaining lower cut, denser fairways, we need smaller particle fertilizers that can readily filter down into the turf. This has broadened the product selection because more companies are now offering products in a wider variety of particle sizes," he said.

Return to moderation

Overall, the trend toward reduced nitrogen has been well received within the golf industry, and Street believes the industry is seeing a return to more moderate levels — "somewhere between the high levels of several years ago and the very low levels seen recently."

"Superintendents over the last five years or so have significantly reduced nitrogen rates and they have been pretty successful," Street said. "A few years ago it wasn’t unusual to find annual rates of 10 to 12 pounds of nitrogen per 1,000 square feet on greens and now it’s not unusual to find a superintendent putting down as few as one to two pounds and still doing a good job of maintaining quality putting surfaces."

"The programs of today are based more on the density, recuperative potential and growth of the turf. Color isn’t as critical."

But despite the success of maintaining quality turf with less nitrogen, Street also pointed out that after a period of three years or so, the turf often begins to exhibit signs of stress. "Eventually, growth, density and the recuperative potential begin to suffer and when the superintendent assesses the problem, it may not even be immediately linked to nitrogen," Street said. "But basically, low nitrogen disease problems, like dollar spot, become more common and eventually the fungicides won’t even do a good job because the nitrogen levels are too low. Although it will vary from course to course, I am beginning to see an upward adjustment to a more moderate level of three to six pounds of nitrogen per 1,000 square feet on greens."

"Problems associated with low nitrogen levels are magnified by lightweight fairway mowing, especially when chippings are removed," he said.

As for the importance of phosphorus and potassium, Street agrees that changes are taking place there, too. "In general, ratios of 3-1-2 to 5-1-2 have typically been considered acceptable," Street said. "But recent research from the University of Nebraska has started a trend to higher N-K ratios, the fertilizers with N-K ratios approaching 1-4 to 1 even 1-2-3. Research has shown these ratios increase the tolerance of cool-season grasses to summer stress and the tolerance of warm-season grasses to winter stress."

No rules

Although reduced nitrogen use may be the trend for many courses, it is not a concrete rule. Courses built on sandy soils characterized have a low cation exchange capacity (CEC) and high percolation rate which means nutrients leach very quickly. On courses like these, high rates of applied nitrogen are still necessary.

At Moreno Valley (Calif.) Ranch, a 27-hole course owned by Landmark Land Corp., superintendent Murray Nonhof puts up to 16 pounds of nitrogen per year on his Penncross bentgrass greens. The course, open just a little more than a year, is located in a semi-arid area 45 miles from Disneyland and 60 miles from Palm Springs. "We have greens built on four inches of pea gravel and 16 inches of sand," Nonhof explained. "Because of our low CEC and all the leaching, we have to put down a lot of nitrogen."

Nonhof tests the soil twice a year and bases his fertility program on the results. "I’m a firm believer that a good superintendent should base his fertilizer buying on what the soil tests show," he said. "It’s not a monetary decision, but a decision based on soil chemistry. A ‘by gosh or by golly’ approach isn’t going to work anymore."

Nonhof feeds the turf on his course with a slow-release granular, but is planning to install an injector system to supplement his fairway nutrition program. "We’ll put iron, ammonium sulfate and straight nitrogen through the system, but it will be purely supplemental to our granular program," he said.

Southern sand

Although thousands of miles away from Nonhof’s southern California tract, Dick Gray, superintendent at Lobolloy Pines Golf Club in South Florida, faces much the same situation. Located in the town of Hobe Sound, in what Gray likes to term "Olde Florida," the course opened for play in December 1988. It was built almost entirely on sand. "We have less than 2 percent silt..."
Fla., was the first of the stadium courses. There are now 14 in the United States with another six in varying stages of planning and construction, according to PGA Tour Director of Public Relations Sid Wilson.

There is another in Bato, Japan, the site of a recent United States-Japan Seniors championship. Another 10 Japanese TPC courses are on the drawing board, Wilson added.

"We're obviously delighted that the TPC network is being honored by its peers," said the PGA Tour official. "The Tour has always taken great pride in its TPC courses. Our players become involved as consultants and work very closely with the architects. Yet while the pros play on the course one week a year, he is still very playable for the members the rest of the year."

GCBA President Perry Dye of Dye Designs will make the presentation, which has become one of the highlights of the association's annual meetings.

"We're very proud of how this award has grown since it was first presented in 1984," said Rossi. "There were just 40 people at the first award dinner. Last year there were 225."

The National Golf Foundation was the inaugural award-winner. Following the NGF to the podium over the last seven years were the Golf Course Superintendents Association of America, Golf Course Architects of America, Professional Golfers Association of America, Club Managers Association of America and last year's winner, the U.S. Golf Association Green Section.

There are now 14 in the United States with another six in various stages of planning and construction, according to PGA Tour Director of Public Relations Sid Wilson.

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Flymo

Continued from page 1

steep bank and cut off a toe or finger," explained Masciarella.

Faced with millions of dollars in injury lawsuits and concerned for the safety of golf course workers, Flymo’s Canadian manufacturer stopped selling the mower in the United States in 1985, according to Masciarella.

That created a big problem for Precision Small Engine. The Pompano Beach, Fla.-based company, which had carried the Flymo line since 1978, had been doing better than $500,000 in Flymo sales annually.

"We decided we had to either come up with a new product line or develop a way of making the Flymo safe. We had so much experience with Flymo that we decided to develop the "Safety System," said Masciarella.

Flymo, which is now manufactured in England and still enjoys wide distribution throughout Europe (where the machine is rarely put through the rigorous use it is in this country) had little reason to develop such a system, said Masciarella.

So he decided to do it himself. Working with Precision Small Engine sales manager George Whistler and cousin Steve Brandt, the Florida businessman spent the next 21/2 years and over $50,000 trying to come up with a safety device that would be acceptable to golf course superintendents.

"We worked a lot of nights and weekends. We put together plastic models. I even kept what I called a Flymo Bible that I used to write down anything that occurred to me," said Masciarella.

What they came up with was an aluminum disc with a triangular monofilament line that snaps in and replaces Flymo’s metal blade, effectively turning the mower into a large weed trimmer.

"If the monofilament line hits someone it may sting, but it isn’t going to permanently disable the operator," said Masciarella.

Masciarella patented the 'Safety System' in September 1988. He then approached the English manufacturer of Flymo, which conducted its own tests.

The British company accepted the design and will be incorporating it into its new mowers.

In exchange for the patent rights, Precision Small Engine was named the exclusive U.S. distributor of the safety kit and the new mowers.

Convincing superintendents and club managers (who often faced their own personal injury lawsuits) that Flymo could be made safe was our biggest accomplishment, said Masciarella.

His company has demonstrated the 'Safety System' at various trade shows. Apparently the superintendents liked what they saw, ordering 3,500 of the $49.95 kits already this year.

"We’re not making much at that price," he said. "It’s really a promotion. They stopped selling new machines here in 1985. That means most of the Flymos are at least five years old. We’re hoping that the superintendents will be buying new units (which cost about $700 apiece) down the road."

The manufacturer has redesigned a commercial Flymo unit and dubbed it a golf course trimmer. In addition to the 'Safety System', it has been beefed up with a commercial engine better suited to the needs of a golf course.

An 18-hole course will usually have between one and five of the Flymo units. With a market of 15,000 courses, and another 4,000 expected to come on line in the next 10 years, Masciarella is optimistic about Flymo’s future. He expects to sell between 2,000 and 3,000 new mowers next year and projects sales at 15,000 within three years.

"We’re gearing up for the February International Golf Course Conference and Show in Orlando right now," said Masciarella.

"We’ll have an inventory of 500 mowers then with another 500 on the way in May. We’ve already pre-sold 300 of them.

"Our new unit is going to be more expensive than the other so-called Flymo unit imitations. But ours is the only one that is going to be safe."

Membership has its advantages. Kubota offers the most reliable mowing and verticutting unit on earth—the Verti-Reel.

Built for total turf maintenance whether you have golf courses, sports fields, sod farms or commercial mowing applications, the Verti-Reel provides verticutting and mowing in one proven unit.

Verticut 18 holes in less than a day. Outcuts triples mowers. Easy mowing/verticutting head changeover. Power pack mounted conveniently on tractor’s three-point hitch. Direct drive hydraulics for consistent cutting speed.

How your tractor performs can have a significant impact on the efficiency of your operations. Kubota excels with direct-injection diesel engines in both the M4030SU Turf Special and L3250F Turf Special for greater power, performance and economy.

The advantages of Turf Club membership are numerous. To find out more, write Kubota Tractor Corp., P.O. Box 7020-T, Compton, CA 90224-7020.

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A complete line of trailer and truck-mounted aerial lifts, six models of chippers to choose from in 6” to 12” capacities, and three models of portable stump grinders make Promark one of the fastest growing companies in the tree-maintenance industry.

Our reputation for innovative design and rugged construction is one reason more arborists across the country are choosing Promark.

For information on our entire line of equipment and the name of your nearest dealer, call Promark today!

Remember to ask about our PRO-LEASE plan.

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Continued from page 1

Ives/Ryan Group in Downers Grove, Ill., said, "The quality of work was extraordinary."

Superintendent Renny Jacobsen said: "We are dedicated to the quality of the course. Every step of the construction was carefully managed... There were no shortcuts."

But the time was short. Jones said construction began June 9 and seeding was finished Oct. 15.

Taking into account two weeks of rainsoaks, Martin said the work was completed in 95 working days, with crews of as many as 180 men on the course at one time and working dawn to dusk.

"As phenomenal as all of this sounds, there are procedures and techniques that can be used over again to develop a golf course in this same time frame," Martin said. "A critical path of construction was developed immediately targeting various tasks to be completed by certain days to maintain the pace... This golf course had some large hurdles to clear to finish construction. However, the critical path concept could be used on other courses to complete a '90-day miracle.'"

By and large, the course was completed on time...

"Everything had to fall right into place," said Balogh. "There was no time for error... We were working in several different areas at the same time and needed supervision right there and had to move on immediately... like earth moving... as soon as the shaping was done the fine shapers moved right in."

Despite the speed with which the course was completed, Balogh said he could have cut three to six weeks off the time if he had all the equipment he wanted on site from day one. But Kuhn was also busy at other sites and couldn't immediately provide all the gear.

At the peak of construction, 44 pieces of equipment were on site, including 15 scrapers, six bulldozers, eight trucks, two front-end loaders, two box blades, four shaping bulldozers, two seeders, two trenchers, two backhoes and one greensmixin machine.

Martin, who was on site daily to oversee the construction, said the course could be used on other courses to complete a '90-day miracle.'"
Stadium courses

Continued from page 18

If Luikens has a problem with his dirt pile, it is one he readily accepts. "We have to mow the rows or benches with a Flymo and a Weed eater. It takes about two hours and that's costly. Over the years we've lengthened holes, moved bunkers, put mounding down the sides of fairways, anything to improve individual holes or groups of holes. The big hill behind No 18 will probably benefit more people in more ways."

How does Luikens justify a $100,000 "bump" on a daily fee course?

"Ask yourself," says Luikens, "does the daily tee golfer deserve a course with all the excitement he would expect to find on a championship tract played by pros? We think he does."

Gary Rippy, TPC's head professional concurs. Rippy adds the course averages 37,000-40,000 rounds per year, of which 25,000 are tournament rounds.

"Those include corporate outings," advises the pro. "Plus, we hosted the Golf Digest ROLEX Intercollegiate and the U. S. G. A. Senior Women's Amateur this spring and summer and will host the Lee Trevino State Open this Fall."

In 1988, TPC was the site of the Insurance Youth Golf Classic tourney and several qualifying events as well.

The comment of one PGA Tour official to superintendent Luikens sums up the effort and finished product. "He told me that we had the most natural looking stadium on Tour," said Luikens. And a pretty nifty stage for the fat lady's finale as well.

Frances Trimble is a freelance writer based in Houston, Texas.

Sod Producers schedule plans


The Jan. 23-25, 1991, midwinter conference in San Antonio, Texas, will be followed by the July 24-26 summer convention in Santa Barbara, Calif.

The Feb. 5-7, 1992, midwinter conference will be in Las Vegas.
Quake recovery

continued from page 1

started up our emergency well on
the back nine and a water tank for
the front nine.

"The toughest thing was that it
was 85-88 degrees and the grass
really burned up until the electric-
ity returned." Turner's crew at DeLaveaga
used a gas-powered pump nor-
mally used to drain bunkers and
pumped water into spray tanks
from a lake; they then hand-wa-
tered the greens.

"That kept us going until late
the next day when we isolated the
irrigation system leaked and got
electricity back on," said Turner.

"The whole community was
upsidedown." — Dean Gump
Pasatiempo GC

At Saratoga Country Club in San
Jose, where electricity was out for
days, superintendent Brian
Bagley was faced with an intrigu-

ing problem. The course has a
gravity-fed sump pump and the
sump remained full "but we
couldn't pump it out until the gen-
erator arrived," he said. "Until it
did, we took the spray tank, hooked
up a hose and siphoned the water
out of the sump and into garbage
cans. We ran two carts in tandem
with two cans in each one and wa-
tered the greens.

"After the generators came, we
were all set."

And at Aptos Seaside Golf
Course just east of Santa Cruz,
where there was plenty of water
but electricity for two days, super-
intendent Mike McCraw also said
"the biggest problem was worry-
ing about the grass dying."

Otherwise in the San Francisco
area the earthquake's damage was
hit-or-miss — a random assault.

A spokesman at The Olympic
Club in San Francisco reported,
"Absolutely no damage." Another
at Sharon Heights Golf and Coun-
try Club in San Mateo said there
was no damage there.

And a member of the mainte-
ance crew at Palo Alto Hills Coun-
try Club said, "We got the heck
shook out of the clubhouse and
the quake showed a few blemish
cracks — that's all."

For the fourth consecutive year Victory was the highest rated commercially avail-
able chowings fescue in the national Fine Fescue Trials. Victory is a low growing,
shade tolerant variety that has possibly
the darkest green color of any other
chowings fescue. It exhibits superior uni-
formity and disease resistance, too. If
you like picking winners, pick Victory.

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Continued on page 29
Shortstop is the little guy with big benefits. As its name implies, Shortstop is a slower and shorter growing variety of turf-type tall fescue. But don't let its appearance fool you. Shortstop forms a beautiful, dense, uniform turf of finer, darker green leaves.

**SHORTSTOP TURF-TYPE TALL FESCUE**

Shortstop is the little guy with big benefits. As its name implies, Shortstop is a slower and shorter growing variety of turf-type tall fescue. But don't let its appearance fool you. Shortstop forms a beautiful, dense, uniform turf of finer, darker green leaves.

**BRONCO Kentucky Bluegrass**

Bronco is a very wide bladed Kentucky bluegrass that was developed specifically as a mix companion for turf-type tall fescue. While its texture and color gives it the appearance of a tall fescue, the comparison between the two ends there. Bronco is elite Kentucky bluegrass all the way. It has been bred to be less dense so it won't crowd out tall fescue and yet still aggressive enough to fill in and repair damaged areas quickly. That's what makes Bronco ideal for sports turf use.

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**CROSSFIRE TURF-TYPE TALL FESCUE**

CROSSFIRE turf-type tall fescue is the only strategy you need for battling a summer ambush of heat and drought. CROSSFIRE is a lower and slower growing variety of tall fescue that exhibits a very dark green color. It combines improved heat and drought tolerance with outstanding turf quality to produce a dense and durable turf. CROSSFIRE's high marks in overall performance during its initial evaluation proved it was ready for the field. Let CROSSFIRE show you how to endure a long summer siege.

**SPARTAN**

Spartan is a robust, advanced generation of hard fescue that is dark green, leafy, and persistent. It demonstrates excellent cold tolerance and creates attractive, low growing, low maintenance turf. Spartan mixes well with perennial ryegrass, Kentucky bluegrass, and other fine fescues. It is an outstanding component in many shady and low maintenance mixes suited for use on home lawns, parks, and golf course roughs.

**AMERICA KENTUCKY BLUEGRASS**

AMERICA is a low maintenance Kentucky bluegrass that has a dense dwarf growth habit, dark green color, excellent disease resistance, and good shade tolerance. Perfect in mixes, AMERICA is ideal for golf course fairways, sod production, playing fields, and home lawns.

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**DELAWARE**

DeLaveaga Golf Course, just cast of Santa Cruz, suffered severely. "Business is really down," said superintendent Mike McCraw. "The highway is closed. People from Silicone Valley who get here on Route 17 can't get here. A lot of people have left Santa Cruz. Its beautiful old main street with old brick buildings that withstood the 1906 quake didn't withstand this one. A lot of people are really hurting. The houses of some of my crew were destroyed."

DeLaveaga Golf Course superintendent D. Campbell Turner said play was down 30 percent at that Santa Cruz course because of the Highway 17 closure.

Dean Gump at Pasatiempo in Santa Cruz said: "The whole community was upside down... No one wanted to come out to play anyway and it was difficult for people to get over the highway here. The road will be open Thanksgiving." Yet at the other end of Highway 17 the story was different. "Business has picked up because people can't get to Santa Cruz. It's now a four-hour drive instead of one hour," said superintendent Cliff Rourke at Riverside Golf Course in San Jose. "Our course was open the next day (after the quake). When it hit people just played out their round. Quakes are not new to this area, though the magnitude of this one was different."

And at Los Altos Hills Golf and Country Club, superintendent Mike Simpson reported that, although the clubhouse was closed a couple of days, members were out on the course the next day and "wondering why there was no detergent in the ball washers."

---

**QUIK WASH**

Pickseed also produces the following quality turfgrass varieties: Agram chewings fescue, Jasper creeping red fescue, Jussi perennial ryegrass, Alpine Kentucky bluegrass, Esler colonial bentgrass, and National creeping bentgrass.

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**QUAKE**

Continued from page 28 hours.

At other affected courses, irrigation systems took the brunt of the quake's damage. Although Los Altos Hills Golf and Country Club sustained a "razorblip split right down the middle" of one green, superintendent Mike Simpson said five breaks in his main line were his greatest concern.

Cracks and splits in the cement pipe system required that sections of pipe were cut out and new ones installed. Four of the breaks were three to four feet down in the ground, but the fifth was 10 to 15 feet below the surface, Simpson said, and it was still being worked on in mid-November.

Superintendent Cliff Rourke at Riverside Golf Course in San Jose said his 35-year-old steel irrigation system sustained a dozen main line breaks.

"It's real brittle and the quake wrinkled it enough to cause a problem," Rourke said.

All the pipes around the greens are PVC, so the damage was confined to fairways, and Rourke said, "The final effect wasn't really so bad because it exposed deterioration in the system sooner than normal."

"The breaks were three to five feet deep, we dug down and welded them."

Yet a universal case against old irrigation systems could not be made. Aptos Seascape's McCraw reported that his 30-year-old asbestos concrete system "came through with flying colors."

The earthquake had one positive effect in that golf course officials were forced to re-examine their quake preparedness programs if they hadn't already.

DeLaveaga's Turner said a preparedness training seminar was held shortly before the quake hit. "The main thing we were concerned about is that you've just got to react," he said.

When that time came on Oct. 17 it was after 5 p.m. and the DeLaveaga maintenance staff was gone for the day. But the golf course marshal was on hand and he turned off the electricity while someone else turned off the gas — the two vital moves.

Pasatiempo's Gump said, "We made sure everyone knows how to turn off the electricity, gas and water."
Shuttlecraft being restructured

Golf Cars Ltd.'s 1990 model of Shuttlecraft golf cars is not yet available because Shuttlecraft, USA Inc., which provides the company's golf cars, is undergoing restructuring.

Shuttlecraft General Manager Mike Sjoblom said new models are being developed while the company completes its restructuring plan.

"We are busy working on model improvements," he said. "In our efforts to reorganize the company, we feel confident that we will be able to better position ourselves in this competitive market." Shuttlecraft recently moved into a new facility in Estherville, Iowa, and plans to enter the electric golf car market.

Jack Pobie of Golf Cars is confident that Shuttlecraft "is here to stay and will continue to improve its fine products."

---

Echo honors distributors, servicemen

Echo Inc. has named Brian Chick of West Sacramento, Calif., as winner of the Master Service Award, for the second year in a row, and George Bennett and Dalton Elmer as co-winners of the Outstanding Distributor Manager Award.

Chick, of Golden Eagle Distributing, won the top product service honor for his "outstanding commitment and expertise in all areas of service management including dealer training, warranty management, and supervision of an excellent servicing dealer organization."

Bennett, service manager for Power Tool Co. of Johnson City, Tenn., and Elmer, service manager for Echo Distributing Inc. of Kent, Wash., won their award for demonstrating "outstanding technical expertise and ability to deal effectively with service-related problems, warranty management and dealers and their customers."

Echo Inc. makes and markets its fine products. "We started with fresh ideas and state-of-the-art technology and developed a truly well-engineered machine where every feature produces performance."

---

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The Bunton triplex is light on its feet, yet heavy-duty in construction.

Until now every greensmower ever built was a compromise designed to keep total machine weight down, to reduce turf compaction, at the expense of heavy-duty construction. Rather than striving to reduce total machine weight, our engineers concerned themselves with the pressure actually transferred to the surface. The result is more durable components that improve cutting performance. That means better greens surfaces... and for a longer time.

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And if that isn't enough, Bunton offers standard what others have as add-ons. With Bunton, what you demo, is what you get. And at a competitive price.

Call or write today for more information and a demonstration.

---

Deere unveils replacement parts program

Deere & Co. has announced a new program for its 3,000 dealers who service grounds-care equipment, that will provide a broad line of replacement parts for all makes of outdoor power machines.

The program gives dealers several options. The Kwik-Fix line includes 185 parts and accessories that represent about 96 percent of the items do-it-yourself customers ask for. These are pre-packaged parts that a dealer can display.

The Kwik-Fix line provides such high-volume parts as cutting blades, air filters, mufflers, spark plugs, starter handles and rope, throttle cable, tune-up kits, wheels, and other parts for many different brands of mowing equipment.

John Deere dealers can also stock bulk parts to repair competitive equipment that is taken in trade on a new Deere machine.

"Many customers expect to trade something in when they buy a new mower," said Product Manager Jon Heintzelman. "With this new parts program, dealers can repair used machines for resale. And the pre-packaged parts will attract more do-it-yourselfers to increase store traffic."
Amigo wins plant variety protection

Northrup King's Medalist Turf Division has announced that Amigo dwarf tall fescue has been granted plant variety protection. A fine-textured, low-growing plant, Amigo is entered in the National Tall Fescue Turfgrass Trials and rates in the top 10 percentile. Northrup King reported that Amigo will be commercially available in the fall of 1990.

Kangaroo granted patent on golfbag cart

Timothy R. Pope and Kangaroo Products of Columbus, N.C., have been granted a patent for the Hillcrest motorized golf bag cart.

Acclaim approved for bentgrass use

Hoechst-Roussel Agri-Vet Co.'s Acclaim 1EC herbicide has been approved for use on bentgrass. It was already cleared for use on turfgrass, Kentucky bluegrass, perennial ryegrass, fine and tall fescues, annual bluegrass, and zoysiagrass. It controls crabgrass, goosegrass, barnyardgrass, Foxtailsp., Panicumsp., Johnsongrass and sprangletop.

Weather-matic adds distributors

Weather-matic, a Dallas-based irrigation equipment manufacturer, has added Wickham Supply of Carrollton, Texas, and United Pipe and Supply, Inc. of Washington as distributors. Wickham has outlets in Irving, Richardson and Colleyville, Texas. Tacoma-based United Pipe and Supply has outlets in Seattle, Wenatchee and Spokane.

Don Thompson, Weather-matic’s director of marketing and sales, said the addition of Wickham and United Pipe “reflects the strategic expansion program currently underway at Weather-matic.”

Bio-Groundskeeper® Benefits Go Deeper Than Thatch Reduction

“In the past, we have never had roots over four inches. Now, the roots on the greens and tees are eight inches or better.” Rich Page, Sentry World Stevens Point, WI

Thatch reduction helps plants develop larger root systems which results in better water and fertilizer uptake and less plant stress.

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Putter, the world class grass for world class greens.

Putter was developed at the Puyallup Research & Extension Center of Washington State University by Dr. Stan Brauen and Dr. Roy Goss. After years of searching and hundreds of tests looking for a superior creeping bentgrass, Putter finally met Jacklin's criteria for a superior variety.

The rich, dark, bluish-green color is irresistible to every golfer. With excellent turf vigor, fine-leaf texture and improved resistance to take-all patch disease, Putter is exciting news for golf course maintenance staffs. Quality features include a dwarf growth habit and high-shoot density. It's highly aggressive against Poa annua.

Developed and tested by Dr. Stan Brauen and Dr. Roy Goss, Putter achieved high ratings in overall turf quality in tests for color, density and improved resistance to take-all patch disease at the Western Washington Puyallup Research Station.

Another fine, quality-controlled product of Jacklin Seed Company

For free information circle #138
Spill readiness program prepared by PLCAA

The Professional Lawn Care Association of America is making available a new spill readiness audio training program. The five-part audio cassette covers areas of interest to owners (spill prevention and the four key components of spill readiness); managers (spill reporting and dealing with the news media); lawn technicians (three emergency priorities and answering questions at the spill scene); office staff (information checklist, finding the boss and handling the media); and assistant manager (spill equipment checklists, containment and cleanup, and answering questions at the spill scene).

The tape is supplemented by a spill readiness guide that includes spill reporting requirements, sample calculations, labeling and inventory recommendations, and a mock spill drill for employees.

To order the program call Victoria at 1-800-458-3466. The cost is $60 plus shipping and handling for members, $90 for non-members.

Circle No 241

Deere puts together safety tips

John Deere has compiled the best 11 of its safety films on one 84-minute 1/2-inch VHS videocassette. Two programs provide mowing safety information. One segment shows near-miss victim situations and testimonials "to foster a positive safety attitude" for operators. A second segment shows a father teaching his son safe mowing.

Other programs discuss safety considerations for larger tractors and heavy equipment. One animated segment gives motion to safety signs in order to explain their messages in an entertaining format.

The programs run from 90 seconds to 23 minutes long.

To order a VHS cassette for $15, write to: Deere & Co., Distribution Service Center, Safety Films Dept., 1400 Thirteenth St., E. Moline, Ill. 61244.

Circle No 353

Lawn Overseeding

How to improve your lawn with thicker growth, better color, and greater resistance to disease and drought.

A new brochure on turf overseeding entitled "Lawn Overseeding" is now available from the Cushman Division of Ransomes.

The pamphlet can be used to promote overseeding and provides information on the why's and wherefore's of overseeding, such as when to overseed, choices for grass types, how to prepare a lawn and recommended equipment.

The 16-page pamphlet includes a glossary of grass and lawn maintenance definitions and can be used by homeowners, lawn maintenance firms and retail stores.

Copies are available in quantity for 10 cents per copy. For information write Lawn Overseeding brochure, Cushman, P.O. Box 82409, Lincoln, Neb., 68501, or call 1-800-228-4444.

Circle No 355

Cushman updates Ryan catalog

A new catalog of Ryan aerators and other turf care equipment for the lawn care industry is now available from the Cushman Division of Ransomes.

Included in the brochure are the Lawnaire 28 reciprocating aerator, the Mataway Overseeder, the Ryan Spotseeder, sod cutters, turf rollers and tractor-mounted and towed aerators.

For a free copy of the catalog write the Cushman Sales Department, P.O. Box 82409, Lincoln, Neb., 68501, or call 1-800-228-4444.

Circle No 251

$2,895.00*

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For free information circle #133
Edward L. Hoffman, president of the Club Managers Association of America, recently announced his resignation from the board of directors for health reasons. Hoffman announced his resignation at the board's Nov. 4 meeting. He will be succeeded by Kenneth W. Brown, CMAA vice president and general manager of the Indianapolis Athletic Club.

Hoffman served as general manager of the Racine Country Club in Racine, Wis., from October 1984 until last July. Prior to this appointment, he was general manager of the Green Acres CC in Northbrook, Ill.

Hoffman joined the CMAA in 1961 and was first elected to the board in 1983. He has been actively involved on various committees including Budget and Finance, P.A.R.L. Research and Publication, Executive Career Service, Insurance and Executive.

Hoffman plans to remain involved in the association's activities and continue in the capacity of chairman for the 1990 annual conference, Jan. 29-Feb. 2 in Orlando, Fla.

A group of 90 Scandinavian golf superintendents recently toured several U.S. golf equipment manufacturing plants and courses.

The superintendents hailed from Denmark, Finland, Norway and Sweden. The group began its tour at the Jacobsen Division of Textron plants in Racine, Wis., and Charlotte, N.C. They also met with local golf course superintendents and questioned them on turf care practices.

Among commercial trimmers, three names dominate the turf. With Shindaiwa, Echo and Green Machine sharing 95% of the market.

The foreign superintendents also visited the University of Minnesota Department of Horticulture before flying to Florida. There they played the Doral Country Club's Gold Course and the New Course at Grand Cypress.

"The purpose of this trip is to educate them on what's been done here in the United States," said Neils-Erik Brems, a representative with ORAG, the European turf equipment sales organization that sponsored the trip. "They can go back and educate their boards of directors or green committees on what can be done to improve their courses."

Brems said the popularity of golf continues to grow throughout Scandinavia, with Sweden alone having an estimated 200,000 golfers. The number of courses in Denmark is expected to jump from its present 60 to 100 by the turn of the century.

Continued from page 17

Pebble Beach

Four unique courses

With Pebble Beach Co. owning and operating four courses (Pebble Beach, Spyglass Hill, Spanish Bay and Old Del Monte) on the Monterey Peninsula, each complementing one another, and providing a unique and different golfing experience to the visitor, maintenance practices must be varied widely to meet the character of each course.

Pebble Beach has a special charisma created by its location and its challenging design, history and accolades. One of its beauties is the rugged seaside character that shouldn't be changed.

Here, while integrating the most modern technical approaches to maintenance and providing the highest quality playing surfaces, course officials are preserving the traditional and natural coastal zestiness that only a seaside course can possess.

Recently Jack Nicklaus was filming a TV special on the course and as he walked up to the cliff on the 8th hole, he was asked by Larry Norman, "How do you like it?" And Nicklaus' answer was simply (with a broad smile), "You're making it too nice."

Pakkala, formerly at Medinah Country Club in Chicago and then the Vintage Club at Indian Wells near Palm Springs, pointed out that "our on-course work will continue to keep the integrity of the original Pebble Beach layout — hole by hole. Those fairways that have been narrowed ever so slightly and contours around the greens (not their surface) that become a bit different over periods of time will be continually brought back to their original state from tee to green."

He added, "We will also be working on major improvements on each of our other courses.

"Pops," a caddie who started caddying at Pebble Beach when he and the course were very young, will tell you, "It hasn't changed!"

Frank Pollard is a freelance writer based in Hollister, Calif.

Scandinavian supers tour U.S.

Among commercial trimmers, three names dominate the turf. With Shindaiwa, Echo and Green Machine sharing 95% of the market.

Our 2-cycle engine delivers more power with less weight than either Green Machine or Echo. Quite a feat, considering we sacrifice nothing in quality along the way. Chrome plated cylinders, 2-ring pistons and electronic ignition are standard. The result is a pro machine with the power to work harder. And last longer.

NO BAD VIBES.

Shindaiwa trimmers have the finest anti-vibration design in the industry. We pioneered anti-vibe design. Every unit is engineered around the concept of lowest possible vibration to reduce user fatigue. Even our harnesses is made to absorb vibration. Our T-27 represents our second generation of superior anti-vibe design.

YOU WON'T GET SHIFTED BY SHINDAIWA.

Our shaft is 7MM diameter and splined at both ends for easy maintenance. It's also relieved at the engine end for absorbing greater torsional loading. Compare that to Echo's smaller 6MM flex cable. It's the same thing we use on our smallest home owner flex shaft unit.

LIGHT IN WEIGHT, BUT NO LIGHTWEIGHT.

Special alloy make our units strong, easy to handle and extremely light weight. But our T-27 still delivers greater horsepower than either Echo or Green Machine.

SHINDAIWA KNOWS HOW TO COOL IT...

Our flywheel has a larger fin area than either Echo's or Green Machine's. So it delivers excellent cooling under high heat, high load conditions.

...BUT WE CAN ALSO TAKE THE HEAT.

Shindaiwa's large insulator block allows for a cooler carburetor temperature and less chance of vapor lock. Others are puny in comparison.

SHINDAIWA RACES THROUGH THE CLUTCH.

Greater horsepower requires a larger clutch. Our two-shoe bonded clutch is larger than either Green Machine's or Echo's. So it has greater contact area. That results in longer life and smoother, positive engagement.

COME TO GRIPS WITH A SHINDAIWA.

Our T-27 features a suspend front handle grip made of double-density rubber. Compare that to either Green Machine's 3-key handle made of less durable open cell foam or Echo's one-piece grip of hard plastic. You can feel the difference all over your body.

A PROFESSIONAL APPROACH TO CARBURETORS.

An efficient metal slide-valve TK carburetor allows our T-27 to cut in all directions and deliver precise fuel/air metering throughout the mid RPM ranges where pro trimmers frequently work. It's the same type of carb found on high performance motorcycles.

Echo and Green Machine, on the other hand, offer plastic, rotary-valve carburetors designed for homeowner trimmers.

NOW, HERE'S THE BEST PART!

Every Shindaiwa trimmer is backed by a 7-day money back guarantee. If, after one full week, you're not convinced that our T-27 is the best trimmer you've ever used, we'll buy it back. No questions asked. You can't lose.

READ ALL ABOUT IT.

Send for free literature that tells our comparison story in full detail. And discover Shindaiwa superiority part by part. You'll never be torn between trimmers again.

Shindaiwa. We simply make them better.

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For free information circle #134

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"Pops," a caddie who started caddying at Pebble Beach when he and the course were very young, will tell you, "It hasn't changed!"
Tennis Turf Marking Paint

paint than competitive brand cans can provides 33-1/3 percent more Paint is available in four vivid colors for golf courses, athletic fields, containing 12 ounces.

Golf Course News 34

installation and other turf uses.

Lesco, Inc has introduced The Tournament Turf Marking The new, economical, 16-ounce Lesco offers turf marking paint. Jamestown chewings fescue for golf courses, athletic fields, irrigation and landscape containing 12 ounces. The Tournament Turf Marking Paint is available in four vivid colors — white, yellow, red and fluorescent red — in a lead-free formula.

The can fits all standard marking devices and operates in an inverted position. Lesco is headquartered in Rocky River, Ohio. For more information, contact Marta E. Geiger, Lesco, Inc. 216 333-9250. Circle No 350

Cushman adds water-cooled engine

Cushman has expanded its line of Cushman Front Line mower models with the addition of two new water-cooled gasoline engine tractors. Available in both 3-wheel and 4-wheel models, the newest unit features a 4-cycle, 3-cylinder Teledyne-Wisconsin engine that develops 56 hp at 3,000 rpm. The engine has a displacement of 60.88 cubic inches, and develops 44.7 foot-pounds torque at 2,500 rpm. The model "809" 4-wheel Front Line is equipped with hydraulic power steering and is capable of a zero turning radius, using the traction assist brake on the inside wheel.

The "808" 3-wheel Front Line has manual steering and can turn in zero radius for maneuverability. Outside turning circle is 150 inches when the tractor is equipped with the 72-inch mower deck. Mower decks and other attachments are driven through a heavy-duty OMC-built PTO clutch.

A warning horn signals the operator in the event coolant temperature should ever rise above safe levels. An automatic seat switch shuts down the engine if the operator should leave the seat with the PTO engaged.

Contact: Cushman., P. O. Box 82409, Lincoln, Neb. 68501; 800-228-4444. Circle No 302

Moisture-Stat eliminates over-watering

The Moisture-Stat line from Griswold Controls adds moisture sensing and monitoring capability to any existing electro-mechanical or solid state controller to eliminate over-watering. Moisture-Stat allows watering to occur only when it's needed.

The system consists of a control panel with moisture level indication, adjustment and bypass provisions along with four sets of special stainless steel probes. Each valve zone can be assigned to a set of probes.

Moisture-Stat II offers a convenient front-panel display that keeps track of the percentage of water saved. The system pays for itself in a few short months.

For more information, contact: Marketing Department, Griswold Controls, 2803 Barranca Road, Irvine, CA 92714; 714-559-6008. Circle No 349

Course Cover controls erosion

Course Cover, a new line of erosion control/revegetation products for the professional turf manager has been introduced by North American Green.

Course Cover includes a line of four products designed to control erosion on both slopes and in drainage channels. The blankets reduce rainfall impact, reduce velocity of run-off water, and transportation of soil particles. Sewn together between two polypropylene nets, the blankets stay in place until a vegetative cover is established.

Write or call North American Green 1-800-772-2040 or in Indiana 812-867-6632. Circle No 335

Having trouble getting bentgrass? Try Jamestown Chewings Fescue

It's no secret that bentgrasses are in short supply. It's hard to get enough creeping bentgrass. But there is a solution: Jamestown chewings fescue! After all, chewings fescue has been used on golf courses for over three centuries. And there's none better than Jamestown. It's been proven in tests at the University of Rhode Island and on prominent courses for more than 20 years.

For new greens
Cut your bentgrass needs in half by using a mix which is 50% Jamestown and 50% bentgrass by seed weight. Not only will this match the performance of a solid bent, but will give some added benefits as well. Jamestown establishes quickly and puts the greens into play faster. It will perform as a companion grass for up to 10 years as the bent-grass matures and gradually dominates the turf.

For repairs
Use 3-4 pounds of Jamestown with 1/2 lb. of bentgrass per 1000 square feet. This mixture has proven very effective in emergency repair of damaged greens.

For winter overseeding
Consider Jamestown as part of a mix for overseeding southern Bermudagrass greens, tees and lawns. Jamestown will enhance turf performance during winter months. So whether it's to help out with a bentgrass shortage, or add benefits to your overseeding program, try Jamestown chewings fescue.

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Jamestown chewings fescue played a big part in developing The Links at Spanish Bay in Monterey, CA: Greens: 80% Jamestown, 20% Colonial bentgrass Tees: 100% Jamestown Fairways: Blend of chewings fescue including Jamestown Roughs: Mixture of fescues including Jamestown chewings, Reliant hard, sheep and creeping red

For free information circle #135

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To locate the Lofts' distributor nearest you, call (800) 526-3890 (Eastern U.S.) * (800) 547-4063 (Western U.S.)
**Toro's 224 enters gas-power market**

After introducing the company's Groundsmaster 220-0 diesel trim mower, Toro found that some users preferred gas-powered mowers. The new 224 is Toro's response.

Customers had noted that groundskeepers' current key need was for a compact trim mower that combined maneuverability and high productivity with comfort and servicing ease. The 224 features a three-cylinder, liquid-cooled Mitsubishi G13C engine that delivers 24 horsepower. It is a gasoline conversion of the 220-0's L3C diesel engine. The 224 offers more horsepower than the diesel version's 20.5 because gasoline has a higher energy content than diesel fuel.

Groundsmaster mowers maintain operator comfort and improve handling ease by using a new power-assisted, four-link steering design.

Contact The Toro Co., Commercial Division/Marketing Services, 8111 Lyndale Avenue South, Minneapolis, Minn. 55420. Circle No 303

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**Clarke introduces trash pumps**

A new line of trash pumps with quick access to the impeller, volute and casing for cleaning and maintenance has been introduced by Clarke Power Products.

The self-priming, centrifugal trash pumps are available in 2-, 3- and 4-inch sizes. Clarke says the pumps are ideal for water that contains compounds often found in agriculture and construction applications. The pumps have a steel frame and overall lightweight, compact design for easy handling and moving to and from job sites.

To achieve maximum fuel efficiency, the 2- and 3-inch pumps use Honda engines and the 4-inch pumps feature Robin engines.

Contact Craig Valentine, Clarke Power Products, P.O. Box 391, Bowling Green, Ohio 43402; 1-800-227-9603. Circle No 268

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**Golf 2000's yard markers speed up play**

Visualize a course with the grass uninterrupted by concrete or asphalt, where play is faster because cart paths follow the fairway and where the yardages are clearly marked.

Golf 2000 Corp. of San Diego, Calif., offers two new products which help to speed up play. Their interlocking pavers protect turf and are used to construct cart paths in the fairway. Their 5- by 10-inch yardage markers lie flush with the fairway and are easily visible.

Placed at 10-yard intervals in the center or at the sides of the fairway, the markers allow golfers to quickly determine the yardage, hit fewer misclubbed shots and speed up play. Their interlocking pavers protect turf and where the yardages are clearly marked.

Two new products which help to speed up play are faster because cart paths follow the uninterrupted by concrete or asphalt, where play is faster because cart paths follow the fairway and where the yardages are clearly marked.

The pavers and yardage markers do not violate the rules of golf and are covered under USGA Rule 24-2.

Contact Golf 2000 Corp., 9842 Hibert St., Suite 257, San Diego, CA 92131; 619-566-6189. Circle No 341

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**Turbo Shredder said 'revolutionary'**

Excel Industries has introduced what it calls a "revolutionary" new Turbo Shredder mower deck that chops grass clippings into fine particles that return to the soil surface. It is a revolutionary new Turbo Shredder mower deck that chops grass clippings into fine particles that return to the soil surface.

Customers had noted that groundskeepers' current key need was for a compact trim mower that combined maneuverability and high productivity with comfort and servicing ease.

Development of the Turbo Shredder deck was prompted by the need for an environmentally safe way to dispose of grass clippings without the use of plastic bags.

The Turbo Shredder 51-inch deck will be standard on all Hustler 251K models beginning in late July, 1989. The 251K is an 18 hp dual hydrostatic mower that provides the ultimate in maneuverability and true zero radius turning.

For more information contact: Excel Industries, Inc. P.O. Box 7000, Hesston, KS 67062-2097; 1-800-835-3260. Circle No 319

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**Dormant feed with Milorganite this fall, And see results like this next spring**

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For free information circle #136
December

4-7 — Ohio Turfgrass Conference and Show, sponsored by the Ohio Turfgrass Foundation and featuring more than 200 exhibitors as well as lectures, at the Ohio Center in Columbus. Contact Phyllis Poureh, Ohio Turfgrass Foundation, 2021 Coffey Road, Columbus, Ohio 43210; 614-292-2601.

4-7 — New Jersey Turfgrass Expo '89, the Annual Turfgrass Educational Conference and Trade Show, sponsored by the Rutgers Cooperative Extension in cooperation with Cook College-Rutgers University and the New Jersey Turfgrass Association, at Re-sorts International Hotel in Atlantic City, N.J. Contact Dr. Henry W. Indyk, Crop Science Department, P.O. Box 231, Cook College, New Brunswick, N.J. 08903; 201-932-9453.

5-6 — GCSAA seminar on Public Relations and Public Speaking at Atlanta, Ga.

5-7 — Pacific Coast Turf and Landscape Conference and Trade Show at Washington State Convention and Trade Center in Seattle, Wash., including talks by national and regional experts on plant diseases, toxic waste disposal, ground-water contamination and use of pesticides and fertilizers. The event is sponsored by the Western Washington Golf Course Superintendents Association, Washington State University and Jones and Associates. For further information contact Jones and Associates, Park Center, Suite 200, N. 908 Howard St., Spokane, Wash. 99201; 509-327-5904.

5-7—Ohio Turfgrass Conference and Show, sponsored by the Ohio Turfgrass Foundation, at the Ohio Center in Columbus. Contact Phyllis Poureh, Ohio Turfgrass Foundation, 2021 Coffey Road, Columbus, Ohio 43210; 614-292-2601.

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January

7-8 — GCSAA seminar on Basic Principles of Turfgrass Management at Nashville, Tenn.

11-12 — GCSAA seminar on Basic Principles of Turfgrass Management at Nashville, Tenn.

11-12 — GCSAA seminars on Golf Course Construction Techniques and Management and on Golf Course Restoration, Renovation and Construction Projects at Tuxedo, N.Y.

14-15 — GCSAA seminar on Basic Principles of Turfgrass Management at Albuquerque, N.M.

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Golf Course

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Bill Barnette has taken a page out of the used car shopping guides that line supermarket checkout magazine racks to successfully market used turf equipment.

The South Florida businessman publishes a bimonthly newsletter that includes pictures and prices of everything from used mowers to irrigation systems that are collecting dust in golf course maintenance sheds.

The newsletter serves the dual purpose of allowing superintendents to sell old equipment while giving others the chance to buy good, used equipment they may not be able to afford new.

Barnette estimates he has brokered approximately 200 pieces of equipment worth more than $125,000 since Used Turf Equipment Co. published its first newsletter in March from its Hobe Sound headquarters.

"It's been very well received by the superintendents," said Barnette. "We'll list around $40,000 worth of equipment with Bill this year," said Tim Hiers, head superintendent at the 54-hole John's Island Country Club complex in Vero Beach.

"Before, I had to spend a lot of time on the phone finding buyers and advertising our used equipment. So Bill's service has been a great help to me. It allows me to spend that time doing other things around here."

The idea for a used equipment clearing house came to Barnette while he was working as a new equipment salesman in Palm Beach County.

I kept seeing this perfectly good equipment that wasn't being used at a lot of the better courses. Then I'd talk to another superintendent who said he'd buy a used piece of equipment if he could find it," he remembered.

Barnette also took pictures.

Flyers were published and distributed to the 400 superintendents in Palm Beach, St. Lucie, Martin and Indian River counties.

"That's basically the area where I was working. Those are the people I know," explained Barnette.

Barnette knew from his own sales experience that equipment salesmen are very hesitant to handle used equipment.

"It doesn't take a genius to figure out you're not going to get much from a distributor if you try to trade your equipment in," agreed Hiers. "Turf equipment distributors just don't want to handle used equipment."

Barnette also knew from a previous position as division director of maintenance for South Florida Water Co. that much of this used equipment was perfectly usable and sellable.

There are several reasons extra used equipment is often available, according to Barnette.

A superintendent at a more affluent course may find it more economical to institute a routine maintenance program that replaces old equipment every two to four years.

"We have an active preventive maintenance program here that allows us to turn over our equipment every four to five months on a new course. You just wanted to rotate out some equipment with a minimum fee of $100. Sales have included everything from a $22,500 almost-new fairway mower to a $200 sod cutter.

Club Car's vehicles. Call the authorized Carryall Line Dealer nearest you to carryall with all the business he personally can.

The Competition

Club Car's utility vehicles and personnel carriers, available in gas or electric, are rust proof, lightweight, and economical to own.

Carroll is ideal for small space operations with its self-adjusting rack and pinion steering and the tightest clearance circle in its class.

For bigger jobs, Carryall II is a big four cycle/341 cc engine gives it the power to haul and tow one-half ton loads all day without refueling. The durable all aluminum pickup bed and frame are rust proof and virtually maintenance free.

Finally, Tourall is Club Car's new economical personnel carrier which accommodates four passengers comfortably throughout a wide variety of applications.

Club Car utility vehicles and personnel carriers are available with a wide assortment of options. Add a cab or tailgate ramp and instantly increase usage possibilities.

Our dealers provide unparalleled customer service for products sold or leased. Find out more about the economy and versatility of Club Car's vehicles. Call the authorized Carryall Line Dealer nearest you to set up a demonstration.
We blew a few holes through conventional financing.

Introducing the Jacobsen 45 Special Finance Program.

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Take delivery now on a Jacobsen Tri-King, LF-100 or any other Jacobsen reel mower and pay for it later with our 45 Special Finance Program through Textron Finance. It's your chance to get a great deal with 4.5% interest, financed over 36 months. And it's available with skip payment programs. It's our way of blowing a few holes through conventional finance programs. The 45 Special is available only at your participating Jacobsen distributor on deliveries taken between September 1 and December 31, 1989. Give him a call. Or visit his showroom. He'll show you how we're blowing holes through conventional finance programs.

Jacobsen Division of Textron Inc.

Program requires 4.5% down payment and 4.5% pre-paid buyout. Special 6% program available in Canada.
Now it's easier to make your greens come true.

We improved the only true Greens Conditioner.

No one else offers the patented features of the Jacobsen Turf Groomer™ greens conditioner. And now, we improved on the best. We did it by making the Turf Groomer easier to use and more durable. And that makes a big difference when you've got a lot of ground to cover.

The improvements begin up front. The exclusive front roller has a larger diameter for reduced rolling resistance, higher side frame clearance and improved durability. It works even better to "pucker up" horizontal runners and plant leaves, readying them for clipping. And now Jacobsen offers two blade spacings: the standard .280" for most green applications, and an optional .500" which works well where nearby traps have coarse grain sand.

The Turf Groomer's larger, thicker, six point knife blades are even stronger for longer life.

They rotate through the slots in the front roller, cutting horizontal runners and cultivating strong, erect grass plants.

A quick up/down blade adjuster has four positions in 1⁄32" increments so you can condition each green exactly the way you want. Or, you can raise the blades to skip grooming. And a Micro Depth Adjustment dial lets you fine tune cutting heights by increments of .007" without tools.

Every Turf Groomer greens conditioner comes with a sealed aluminum drive housing to prevent grass, debris and moisture build-up in the heavy-duty 1" belt drive system.

For faster, truer putting and healthier, hardier greens, look to the new Jacobsen Turf Groomer. For a free demonstration, contact your Jacobsen distributor.

Or contact Jacobsen Division of Textron Inc., Racine, WI 53403.

Now it's easier to make your greens come true.