A call for data  
Cape Cod Study director asks for information on independent ground and surface water studies. ... 15

Laser technology  
Speed and precision are Ed Connors' hallmark as he renovates tees and greens nationwide. ... 46

Bob blasts Cape Cod courses  
By Mark Leslie  
It was a nightmare of force. Driven by 90- to 100-mile-per-hour winds, Hurricane Bob washed thousands of tons of sand and seaweed and as much as six feet of deadly salt water onto Cape Cod golf courses on Aug. 19, leaving them inundated with destruction. Cleanup chores, turf treatment, reseedings, replantings and repainting kept groundskeeping and clubhouse crews busy into September.

The ocean flooded in on New Seabury golf course, inundating the front nine holes. The 295-yard 8th hole displays a portion of the beauty of Mt. Woodson Country Club in Ramona, Calif., the first Landmark signature golf course. For more on Mt. Woodson and other new courses, see pages 23-30.

Taking a breather 10 days into cleanup, a crew member at Fall River (Mass.) Country Club summed it up succinctly: "It's a mess." Water was five to six feet deep over parts of Kittansett Club in Marion, which sits... Continued on page 17

EEC to intensify competition in golf industry  
By Peter Blais  
The European Economic Commission's efforts to create a single European market by the end of 1992 has created opportunities and intensified competition among golf course developers and industry suppliers.

The 12-member European Community, which traces its roots back to the 1957 Treaty of Rome, is debating nearly 300 legislative initiatives designed to further enhance the free movement of goods, persons, services and capital between member countries. Most are scheduled for adoption by Dec. 31, 1992. Continued on page 26

Florida Golf Council's back to wall  
TAMPA, Fla. — The continued existence of the fledgling Florida Golf Council is on the line as the state trade association conducts its second annual Golf Summit Oct. 3-4 in Tampa.

"There's a chance we won't be here next year," said Jack Mathis, president of the year-old association formed to promote the interests of the state's $5.5-billion golf industry to state legislators and regulators.

"I think we'll make it, but we're at a critical stage. The government is paying attention to what we're saying. But our own industry is the key."

The problem is money. Mathis said the Golf Council needs several hundred-thou... Continued on page 31
E-Z-GO has revolutionized the golf car industry. Again. We put the most advanced 4-cycle engine in the industry into our gas golf cars. It's a 295 cc, twin cylinder overhead cam engine that delivers 8.5 rated hp. And no other golf car on the market has it.

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The forced-air cooling system provides cooler engine operation. And the pressure-fed filtered oil system is more efficient in engine lubrication. Less engine wear. Low maintenance. And long service life. No other engine in the golf car industry can deliver the benefits this one can.


Your players won't be able to resist the added comfort. You won't be able to resist the added value. Just call 1-800-241-5855 to find your nearest E-Z-GO Golf Car representative. Then test drive this car. And you'll find your new fleet.
Urban Wildlife Institute cites DMW projects


Bob Galvin, DMW president, said: "Our research indicates that the integration of natural designs with new development is extremely cost effective and creates a more marketable product. We have created approximately 268 acres of new communities which have received certification."

He added: "We strive to work as a team and include our environmental scientists and client in the design and landscape processes."

State approval paves way for $1B PGA plan

JACKSONVILLE, Fla. — Close, but a project involving $2 trillion in state road funds that, if not approved, threaten to trap a $1-billion project featuring a PGA Tour Hall of Fame and two golf courses for this city has survived state scrutiny.

The Economic Development Transportation Fund Committee voted 4-3 to help build an interchange on Interstate 95.

State money for the cloverleaf interchange at Old St. Augustine Road was considered vital to attract project financing and was needed to improve access to the property.

Total interchange cost will be $62 million. PGA Tour Investments will provide $42 million.

In addition to the Hall of Fame and golf courses, there will be national headquarters of PGA Tour Productions, a resort and convention hotel and 4,500 units of housing and commercial development.

Water recycling process to debut on public course

ELGIN, Ill. — A golf course community planned for two years by Elgin and St. Charles townships has received unanimous approval from the Kane County Development Committee.

The par 72 18-hole course will be ready for play within two years of construction start. Developer James Folsom hopes to begin construction next spring of the 504-home luxury subdivision on the 744-acre project.

It is planned to use a revolutionary "circular water" recycling process, termed "environmentally superior." Water would be treated, aged for more than a month, then used to water the golf course.

Creation of the Otter Creek Water Reclamation District will enable overseeing of operation of the land application system County board approval on the requested rezoning should happen next month.

Audubon Project bestows first honors on Honors Course

FAR HILLS, N.J. — The Honors Course in Ooltewah, Tenn., has been chosen as the first golf course recognized for its conservation and preservation efforts under the Audubon Cooperative Sanctuary Program for Golf Courses.

In recognition of this achievement, the Honors Course, the site of the U.S. Amateur Championship in August, was presented an original oil painting by artist Adriano Manocchio depicting a view of the 9th hole. The painting captures the hole's natural habitat, nest boxes, and wildlife, such as the Eastern bluebird, pileated woodpecker and quail. It was accepted on behalf of The Honors Course by the club chairman, John T. Lupton at a ceremony at the club on Aug. 18.

The Audubon Cooperative Sanctuary Program is sponsored by the USGA and administered by the Audubon Society of New York State.

It seeks to protect and enhance wildlife habitat on existing and planned golf courses, enhance the image of golf courses as sanctuaries for wildlife, and encourage all those associated with the game to become more knowledgeable about environmental issues and take an active role in conservation practices on golf courses.

Several factors contributed to the decision to recognize the practices of The Honors Course. The course was constructed in harmony with the existing site topography, thereby minimizing the negative environmental impact of excessive soil disturbance.

Naturalized tall grasses are encouraged to grow in areas between greens, tees, and landing areas. Native shrubs and tall grasses border the roughs, streams and pond shorelines. Nesting boxes for birds are located throughout the course.

Superintendent David Stone remains an avid naturalist and has instituted several programs to help identify, monitor and encourage a variety of wildlife species utilizing the course environment.

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With miles of fairways, greens and tees to maintain, the last thing you need to worry about is your practice range. That's why you'll appreciate our colorful new, worry-free, Standard Golf Range Banners.

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- They're durable, too. Mounted on do-it-yourself PVC frames (our enclosed instructions show you how), they're designed to stand up to all kinds of weather.

- Best of all, they're very economical!

So you can afford to order all you need. Ask your nearby Standard Golf distributor about the best Range Banners in the business. Available in 25-yard increments from 75 to 300 yards, they'll help you and your members feel more at home — that's right! — on the range.
Sludge dump site of new Chicago course

CHICAGO — The International Port District, the agency regulating the port of Chicago, intends to translate more than a decade of dumping sludge on undeveloped land north of Lake Calumet into an 18 hole golf course with clubhouse.

The port district's recently filed lawsuit said that in 1989, in return for being allowed to dump its sludge there, the Water Reclamation District agreed to build a golf course and clubhouse on the site by 1993.

The lawsuit said the depositing of sludge was supposed to be preliminary to transforming the site to a recreational area. The suit seeks $11 million in damages for breach of contract and $15 million as non-payment compensation.

Long wait ending for city officials in North Augusta

NORTH AUGUSTA, Ga. — It's been a troubled 10 years since North Augusta's riverfront golf course first was broached, but city officials are sidestepping the latest snags and planning to complete the project.

A principal Asian investor has been linked to a bank fraud scandal, but Mark Bennett of North Augusta, a project developer, plans continued work.

The city is equally undaunted. Having established the North Augusta Redevelopment Commission, made up of the mayor and council members, it has the power to seize land in the 15,000 acres of riverfront property in the city's redevelopment district.

The golf course site is within the district.

Developers have bought more than 230 acres for more than $1.85 million.

The council could take the land through eminent domain and develop it or find a new developer.

"A golf course is probably the land's best use, considering the flood plain," said North Augusta Mayor Tom Greene.

Water park could be course amenity

MACON, Ga. — County Commissioner Joe Allen is pushing for a public golf course at Lake Tobesofkee, combining it with a water park.

He has discussed with an unnamed Atlanta firm the possibility of the county furnishing a 160-acre tract of land it owns off Old Columbus Road and the firm developing the course as a joint operating venture.

Said Allen: "If we put the Georgia Sports Hall of Fame on Riverside Drive, the Music Hall of Fame downtown and the golf course and waterpark at Tobesofkee, we'll have I-75, I-16, I-75S and U. S. 80 locked in."

"People will come to Macon."

Member makes literal stink out of added walking fee

MIAMI — The "all clear" signal has sounded at Miami Shores Country Club, and members no longer play golf with their noses in the air.

A member, disturbed that the free fee for walkers had been changed to a $5 "trail fee," vowed that she'd dye before she paid a red (s)cent. She made a raincoat, hat and sunglasses her fashionable golf attire and artfully sprinkled foul-smelling chemicals over the course.

The distinctive odor quickly penetrated her disguise.

Course superintendent Rob Haas tracked her down without the aid of bloodhounds.

Three attempts by Haas and clubhouse personnel to expunge this unwelcome hazard made little headway. But Nature and $4,000 worth of scrubbing eventually cleansed the odious fairways.

The 72-year-old woman was charged with felony criminal mischief.

Assistant professional Mike Walsh wondered why the woman would rather spray than pay. Head pro Randy Webber said only, "The fee will stay for those who play."

Minnesota County plans to develop two golf facilities

ST. PAUL, Minn. — The Ramsey County Board will seek proposals to develop, operate and manage two golf sites in Shoreview and one in St. Paul.

The largest course, projected as 18 holes, would be on 240 acres along the Rice Creek Regional Trail corridor in northwest Shoreview.

At Island Lake in Shoreview, a practice and instructional facility could go on 41 acres, possibly in combination with a small course.

At Battle Creek in southeast St. Paul, a nine-hole executive course could be built on 55 acres.

Construction could begin next year. Island Lake and Battle Creek sites might be open in 1993, the Rice Creek course in 1994.

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Mega-projects get good, bad word in Hawaii

Fasi on warpath when impact fee settled at $50M

Two Hawaiian golf course-related projects seem set for the next development step, but a third has received discouraging word.

Honolulu Mayor Frank Fasi has vowed to block construction of the proposed Royal Kauai project -- which would have 2,000 homes and two golf courses -- unless developer Herbert Hiltpaid $200 million in "impact" fees for the two courses.

The state Land Use Commission voted 7-0 to accept $50 million and stick with an earlier decision to reclassify 708.6 acres masnca of the Village Park subdivision from agricultural to urban use.

Fasi has vowed to sink the project.

$500 MILLION PROJECT

Nansay Hawaii's total project investment for a planned Puako residential golf community on the Kohala Coast of the Big Island will be more than $500 million. There will be six golf courses on 3,000 acres located on most arid lava land sloping upwards from Queen Kaahumanu Highway across from the Mauna Lanai Resort.

Also included are 2,000 single-family and multi-family residential units, a golf academy and commercial center. Project completion is projected by the year 2002.

JAPAN MEMBERSHIPS ON LINE

Plans for 18-and-36-hole golfcourses and "resort houses neighboring the courses" have raised a red flag among Maunawili residents.

Reportedly, golf course memberships will be sold in Japan for $200,000.

Community residents who successfully opposed a state proposal to locate 200 homeless persons on eight acres owned by the golf course developer are trying a new tack against the latest encroachment.

A delegation plans to go to Japan to tell prospective golfers just how rainy Maunawili Valley can be. Presumably, none will be from the chamber of commerce.

$40,000 soil tests show course OK

OAK LAWN, Ill. -- Soil tests commissioned by the Oak Lawn Park District at a cost of $40,000 showed that it was safe to build an 18-hole golf course on a former land fill here.

Therefore, district members voted 3-2 to approve the $85 million project that lists nine regulation and nine par three holes on 77 acres.

Part of the course may be lighted for night golf, said course designer Carl Gotz.

Preliminary tests last summer indicated potentially hazardous chemicals present in groundwater on the course site.

Alabama turning resources to course

BIRMINGHAM, Ala. -- Natural resources once set aside for steel-making may one day be converted to one-family homes near the clubhouse of the golf course being financed by Retirement Systems of Alabama.

That course is scheduled for completion by the end of the year. Hopefully, the Oxsnow Valley's 8,000 acres of largely pine trees between Birmingham and Bessemer will be transformed into homes, businesses, golf courses and schools as Lakeshore Parkway is extended from Mountain Brook to Alabama 150.

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RANSOMES

GOLF CART NEWS

October 1991 5
Adjoining lots will make or break Nevillewood

Nicklaus, Palmer designs add challenge
to housing marketers in Pennsylvania

PITTSBURGH, Pa. — Success of Nevillewood, a housing and golf course community being built in Collier, likely will rest on attracting those who, like A. Jay Buckley, wish to locate next to a golf course. Buckley is president of LeNickel Inc. in Findlay and president of the Valley Brook Country Club in

McMurray. Developers believe that as many as 75 percent of their buyers will be golfers. Donald E. York, an appraiser in Washington, said the value of lots adjacent to a course probably are worth $10,000 to $20,000 more than lots located further from the course.

Nevillewood, an 18-hole layout designed by Jack Nicklaus, opens in July 1992. Other 18-hole golf-housing developments include Treesdale in North Hills, Hickory Heights in South Fayette, the Colony at Chestnut Ridge in Indiana County, and Southpointe in Washington County.


Development of Golden Maple CC, a 650-unit development in Sewickley, Westmoreland County, has been delayed.

Course OK’d, but life will be brief by plan

TINLEY PARK, Ill. — Village trustees and plan commissioners approved a nine-hole public golf course here, but the links life span may be short.

The course must eventually give way to office or light industrial development.

Developer James Gray said that after annexation and special permit are approved, the layout on 50 acres and between 2,400 and 2,750 yards long could be ready in 18 to 24 months.

Hawaii council suggests denial

KANEHOE, Hawaii — Developer Pacific Atlas wants to expand its private par-3 Bayview Golf Course into a full-scale 18-hole course, but the Kaneohe Bay Task Force will recommend that the City Council deny the required permits.

Instead, the task force will urge the city to buy the course and turn it into a Hawaiian cultural center and park.

Pacific Atlas agreed last February to pay the city $20 million for the right to expand its course. Expansion initially was approved by the council, 5-4.

NGF formalizes 4th Golf Summit

ORLANDO, Fla. — Golf Summit ’92, the U.S. golf industry’s fourth biennial leadership conference, will be held at Marriott’s World Center here Oct. 21-23, 1992.

More than 600 industry representatives attended the National Golf Foundation’s Golf Summit ’90 to exchange insights on the challenges and opportunities impacting golf’s growth in the 1990s.

Topics included: the interaction of supply (courses) and demand (players), environmental and other issues impacting golf course development, the growing international market, and opportunities for increasing women and minority golf participation.

For further information, contact the Golf Summit ’92 office at NGF, 1150 South U.S. Highway One, Jupiter, Fla. 33477; 407-744-0003.

Chesapeake Bay program director named by EPA

WASHINGTON, D.C. — William Matuszeski has been named director of EPA’s Chesapeake Bay program. Matuszeski has been the associate assistant administrator for EPA’s Office of Water since March 1990.

The Chesapeake Bay program is charged with protecting the water quality and living resources of Chesapeake Bay. The program coordinates Bay restoration efforts of the federal, state and local governments, and citizen, scientific and environmental groups. It is overseen by the Chesapeake Bay executive council.

William K. Reilly, EPA administrator, at that council’s recent annual meeting unveiled the council’s strategic directions for the Chesapeake.

They are re-examination of nutrient reduction goals; a new focus on pollution prevention; a reinvigorated campaign to protect the Bay’s living resources and habitats, and a special outreach to cultural and economic groups.

Word is spreading almost as fast as our bentgrasses.
West Virginia man nominated to succeed Spaeth for USGA

Stuart Bloch has served as vice president since 1989, and has served on 15 committees.

PALM BEACH, Fla. — Stuart F. Bloch, Wheeling, W. Va., has been nominated as the United States Golf Association's 52nd president. Election will take place at the USGA's 98th annual meeting here Feb. 1.

Bloch would succeed C. Grant Spaulding of Palo Alto, Calif.

Others nominated were Reg Murphy, Baltimore, and M. J. Spaeth of Palo Alto, Calif.

The unanimous conclusion? Blocking would succeed C. Grant Spaulding of Palo Alto, Calif.

The Terre Co.

Shiloh Falls, which will be completed in 1992, will carry the Pate name along with that of PGA Tour pro Fred Couples, a consultant on the project.

The development, to be built over 15 to 25 years, eventually may be worth nearly $470 million.

Plans call for single-family and multifamily homes, shops, business space, recreational facilities and environmental corridors. The development would have a Bavarian theme, reflecting the Pate family heritage.

Taxpayer group determines to fight project

ROCHELLE, N. Y. — Approval of a $2 million 18-hole golf course at Sparke Park, northeast of Rochelle, has a taxpayer group scared — and angry.

Jerry Pate’s interest in design was heightened in 1975 when he visited a course under construction near Birmingham, Ala. — Shool Creek.

Pate brothers designing course in Tennessee

PICKWICK, Tenn. — Former U.S. Open golf champion Jerry Pate and brother Jeff, partners in Jerry Pate Golf Designs in Gulf Breeze, Fla., are overseeing construction of Shiloh Falls course here.

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What’s equally important is our bentgrasses’ performance under varied golf course conditions. From Australia to Africa, our cultivars consistantly produce beautiful, fine-textured greens with true putting quality and reduced maintenance. And outstanding fairway turf with less thatch and excellent wear tolerance. These features are important to superintendents, golfers, architects, and green committees alike.

Don’t just take our word for it. Contact your nearest Bentgrass Marketing Group member today for more information and university test results. And be prepared to put your course on the map.

*Providence and SR 2010 are protected under the U.S. Plant Variety Protection Act.
Kubota has introduced a complete new mowing system, the FZ2100 Front Mower. From "A"—Auto Assist Differential (AAD) to "Z"—Zero Diameter Turning Radius (ZDT), it increases your power and mobility to handle all your mowing needs.

Equipped with 20 horsepower and four-wheel drive, the new FZ2100 Front Mower's zero diameter turning radius gives you the agility and power to handle all your mowing needs. With its round shoulder tires, the FZ2100 offers all the durability and innovation commercial operators have come to expect from Kubota, and it has designed round shoulder tires that virtually eliminate turf damage. The FZ2100 offers all the durability and innovation commercial operators have come to expect from Kubota, and it has designed round shoulder tires that virtually eliminate turf damage.

The FZ2100's front wheels rotate freely through your tightest turns, and Kubota has designed round shoulder tires that virtually eliminate turf damage. And, the FZ2100 offers all the durability and innovation commercial operators have come to expect from Kubota, and it has designed round shoulder tires that virtually eliminate turf damage. And, the FZ2100 offers all the durability and innovation commercial operators have come to expect from Kubota, and it has designed round shoulder tires that virtually eliminate turf damage.

Your authorized Kubota dealer can show you the complete commercial mowing system with the power and maneuverability to handle your toughest jobs from A to Z. For more information write to: Kubota Tractor Corporation P.O. Box 7020-Z, Compton, CA 90224-7020.
Members say 'sell' Calgary, buy another

CALGARY, Alberta, Canada —
Recent poor condition of the Calgary Golf and Country Club course has prompted some members to pressure the board of directors to consider selling the prestigious layout.

The land could fetch "well in excess of $30 million," said one source.

General manager Jim Sherlock said the only way to improve the course would be to "dig it up" and begin again.

Some members want to buy another piece of property to build a 36-hole course on. Sherlock doubted many board members would be in favor of selling the property the club has occupied since 1911.

Ohio town takes Parkview GC by eminent domain

MAYFIELD, Ohio — An ordinance to take Parkview Golf Course by eminent domain has received 6-0 Mayfield Village Council approval.

Negotiations for the 78-acre parcel had stalled. Course owners Pat LaConte and son Richard reportedly asked $5 million for the land.

Last summer, an appraiser hired by the village set the value at about $2.2 million. LaConte, in a federal lawsuit against the village, said the village interfered with his attempts in 1986 to sell the parcel for $3.68 million.

$150M project for course, 600 homes off ground

SALEM, Ore. — City requirements for a $150 million South Salem golf course and housing development took a year to fulfill, but Larry Tokarski now is set to begin construction.

The 18-hole, 140-acre golf course phase of the project that would include 600 homes and condominiums will be finished by the summer of 1993, said Tokarski, president of Stonebridge.

Haney leaving Stonebridge to build center

STONEBRIDGE, Texas — Reinforced by $1.2 million from investors, Hank Haney is vacating Stonebridge Ranch to build a golf teaching center just south of Stonebridge.

Tour professionals Mark O'Meara and Chip Beck will assist in design of a nine-hole layout.

The latest 'word' in bentgrass is PennLinks.

Paul Latshaw is spreading the word.

Paul Latshaw, Superintendent, Wilmington GC, Montchanin, DE

"I know PennLinks to be the finest creeping bentgrass available. I know it's been time-tested on the North Course greens here at Wilmington Country Club since fall of 1984.

"I know PennLinks has an extensive root system, heat tolerance, and requires very little grooming or verticutting because of its upright growth.

"The upright growth habit convinced me to oversee the fairways at Wilmington. I know time will prove I made the right choice. And I like that, too. "PennLinks. Spread the word."
Town's 1st public course centerpiece of project

PELLA, Iowa — Plans for a $32.2-
million public golf course, eight years in the dream stage, soon may be a reality here.

The Pella City Council has en-
tered a public-private partnership with Bos Landen Development Group for the town's first 18-hole and first public course as the cen-
terpiece of a $60-million develop-
ment with up to 250 single-family houses and 140 townhouse, con-
dominium and apartment units. Kurt Kettler, whose idea it was, recruited homebuilder Darrell Van Hall and Central College Assistant Professor Bob Bruns.

They began buying land.

Members of the families that op-
erate Pella's two largest firms — Robs Screen Inc. and Vermeer Manu-
facturing Inc. — teamed with Kettler, Van Hall and Bruns to form Bos Landen, which is Dutch for "land of the trees."

The city is financing $1.7 million of course construction costs, the developers $1 million and the Rolscreen Foundation $500,000.

Bighorn Institute upset, feels course a bother to wildlife

PALM DESERT, Calif. — The proposed 18-hole Altamira Country Club golf course received a 3-2 City Council approval to the dismay of neighboring Bighorn Institute.

A sizable amount of open space will be required between homes and the research center.

Council members Buford Crites and Jean Benson wanted a larger buffer area to shield the institute's lambing pens from human intru-
sion.

Developer Jim Hayhoe plans to build a $350-million project that would include 450 luxury homes, an 18-hole golf course and a 40,000-
square-foot clubhouse.

Paradise Valley course to be built by Flint

FAIRFIELD, Calif. — Flint Golf 
Course Construction Company of 
Sacramento has been awarded the 
construction contract for the $8.2 million Paradise Valley Golf Course here.

The 630-acre golf/residential golf 
complex in the form of unanimous preliminary approval.

The 630-acre golf/residential golf 
development will straddle the 
Millville-Fairfield Township 
boundary on Route 49 and feature 
two 18-hole golf courses, a nine-
hole executive course and an En-
glish-style clubhouse.

Developer Robert Ench said for-
ward from an idea popular in the 
Carolina’s is OK, although it gets hot in the summer, he said.

Henry Paparazzo, developer of Heritage Valley in Southbury and Heritage Hills in Somers, N. Y., sees appeal for permanent residents in the Ridgefield project. “For a vacation home, a place in the Carolinas is OK, although it gets hot in the summer,” he said.

N.J. community gives go-ahead to $100M plan

RIDGEFIELD, Conn. — New 
York City developer Peter Friedman, bor-
rowing from an idea popular in the 
south, wants to build 300 homes around an 18-hole golf course on 255 acres in rural Ridgebury.

Sal Monti, a member of the town golf committee, there would be a demand for homes costing between $350,000 to $450,000. "With basi-
cally six months of golf weather here, people paying that kind of money would rather go further south," Monti said.

Connecticut developer hopes to keep golfers in the North

RIDGEFIELD, Conn. — New York 
City developer Peter Friedman, bor-
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Henry Paparazzo, developer of Heritage Valley in Southbury and Heritage Hills in Somers, N. Y., sees appeal for permanent residents in the Ridgefield project. "For a vacation home, a place in the Carolinas is OK, although it gets hot in the summer," he said.

Paparazzo added that most resi-
dents in his communities don’t play golf. “Many like to live on the golf course because it’s a nice environment.”

1,000-home project wins OK

FRESNO, Calif. — The Fresno County Board of Supervisors has approved plans of New Cities Development Corp. of Carmel for an 18-hole golf course and 1,000 housing units for Quail Lake Estae-
tates, a community east of Clovis.
The Toro Company, Commercial Marketing Services, 8111 eTerrn
Infi Irrigation Expo focusing on new technologies
will address environmental and
industry, government and academia
seminars involving experts from
product lines.
 TECHNICAL PRESENTATIONS and seminars involving experts from
will give the keynote address.

SAN ANTONIO, Texas — "Wa-
ter Enough for Tomorrow" is the
theme of the 1991 International Ir-
rigation Exposition and Technical
Conference Nov. 19-23 at the Con-
vention Center here.

More than 300 exhibitors will
display and demonstrate state-of-
the-art water management products
and services and reveal 1992 new
product lines.

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seminars involving experts from
industry, government and academia
will address environmental and
economic challenges of water con-
servation.

Outlined will be ways in which
water management techniques can
help preserve dwindling water re-
sources and maximize the quality
of agricultural, recreational, com-
mercial and residential lands.

Chemigation will be explored in
depth.

A concurrent session features a
comprehensive picture of the cur-
rent product liability issues by
LaVerne Stetson, U. S. Department
of Agriculture; Richard Fredrick,
Alt Engineering, and Dale Hicks,
attorney. Agricultural technology
sessions include talks by Barbara
Lovett, Yardiine Water Manage-
ment Systems, Riverside, Calif., and
Dr. Lea Sheffield, University of
Nebraska.

Joe Henggeier of the Texas Ex-
tension Service, Fort Stockton, will
discuss "Managing Automatic Sys-
tems for Better Uniformity."

Bill Smith, Motorola's Land Mo-
 bile Products vice president and
senior quality assurance manager,
will give the keynote address.

Dr. Don A. Rice, Texas A&M
University, will discuss profit
improvement strategies, and
David S. Heffer, manager of
economic studies for DuPont in
Wilmington, Del., will target
current and predicted economic
trends and their effect on the
irrigation industry.

In addition to the 30 seminars
and exposition events, there will
be a school of irrigation and land-
scape irrigation auditor training
course, and certification examina-
tions.

LA MARQUE, Texas — The
proposed $3 million Jack Brooks
Park golf course will not involve
county funds, County Judge Ray
Holbrook has told county commis-
sioners.

To clear up "considerable mis-
derstanding," he made it clear
that the course will be constructed
with private financing, with the cost
to be paid over a period of 20 years
with course revenue.

He added, "It's possible that the
Commissioners Court may have to
advance an architect's down payment
to prepare plans, but once financing
can be arranged and a construction
bid accepted, those architect's fees
will be repaid to the county."

Meanwhile, the ESL Golf Corp.,
the consulting firm awarded the bid
for the course work by the Galveston County
Beach Park Board of Trustees, is
contemplating a suit seeking $200,000
payment for environmental studies
and design work.

The University of Massachusetts
and the Green Industry Council are
collaborating on a recycling "How
To" conference for the green in-
dustry and a workshop series on
varied subjects.

Recycling will be reviewed from
8:30 a.m. to 4 p.m. Oct. 8 at LaCava
Campus Center, Bentley College,
Waltham.

Eastern Agriculture Center, 240
Beaver St., Waltham, will be the site
of the new regulations workshop series
Oct. 29 and Nov. 4. Outlined will be
pesticide record-keeping, drinking
water protection regulations, and the
endangered species act.

Pesticide recertification credit
will be available.

Contact Phyllis Gillespie, Green
Industry Council, P. O. Box 171,
Sutton, Mass. 01590, 508-475-3007.

UMass turf school deadline nears

AMHERST, Mass. — Registra-
tion deadline is Oct. 1 for the Uni-
versity of Massachusetts' Turf

The school is an in-depth and
practical study of the culture and
management of turfgrass, especially
appropriate for golf course and
grounds maintenance professionals.

Contact Fredie Goodchild, direc-
tion of continuing education, Room
606, Goodell, UMass, Amherst,
Mass. 01003.

Credit NGF

Source credit should have been
given to the National Golf Founda-
tion for a map showing areas of the
country where more golf courses
are needed that appeared on page 1
of the September issue.

To Ten Company, Commercial Marketing Services, 8111 eTerrn Ave. So., Minneapolis, MN 55420.

CIRCLE #107
Global sharing would help golf industry

Dramatic — and sometimes abrupt — changes throughout Europe and the Soviet Union in the recent past, and a dynamic metamorphosis just ahead among the Common Market countries, have the eyes of the world focused on this part of the globe.

Tentative, yet hopeful, would be golf course developers are investigating financial angles, environmental obstacles, and political ramifications as the planned European Community draws near its late-1992 deadline for implementation.

The golf industry should continue to hope, and pray, for the best. But at the same time it must be ever mindful of words of wisdom concerning government.

"A government that is big enough to give you all you want is big enough to take it all away," said former U.S. Senator Barry Goldwater.

"Government is an association of men who do violence to the rest of us," said Leo Tolstoy.

"Government, even in its best state, is but a necessary evil; in its worst state, an intolerable one," was the assessment of American revolutionist Thomas Paine.

Where does the golf stand?

That said, those in the golf industry must look at golf's prospects in the midst of all this political evolution.

Outside the United Kingdom, where golf took root and grew globally, Europeans have just in the last several years started to "really discover" golf.

Though total numbers of golf courses is low, growth rates in some European nations is phenomenal.

From 1986 to 1989, France's number of courses nearly doubled, from 115 to 300. Finland's more than doubled during that time, from 15 to 32, while Sweden's grew from 165 to 260. The Netherlands' from 32 to 52. Italy's from 60 to 105.

"The United Kingdom and Ireland remained fairly stagnant during those three years, but business was booming elsewhere. Where do these countries stand now? National boundaries will, in many ways, become almost a thing of the past in another year."

Many developers see that as a positive.

"Many suppliers to the golf industry do, also."

The idea of a United Europe, or One World Government — and the many doctrines such associations may one day embrace — can be a frightening thought.

"People in golf might do well to pray that, being involved in a sport, they are insulated from political changes even if they are a direct partner in social change."

In the meantime, they can learn from shared experience in many areas. They can communicate. What's the latest seed research? How much research is being duplicated and money wasted because information is not shared in one succinct way and one physical place? Probably a lot.

In the United States the U.S. Golf Association in Far Hills, N.J., National Golf Foundation and Professional Golfers Association in Jupi- ter, Fla., and UniversityofMichigan are clearinghouses for this sort of information.

The Golf Course Superintendents Association of America is re- searching educational needs in other countries and investigating ways to share its agronomic knowledge with others internationally.

Annual conferences like Golf Course Europe, the InSports and Leisure Exhibition, Golf Asia and Golf Course News Asia Conference in Singapore March 26-29, 1992. As we gear up for 1992, I want to reiterate that we are committed to providing you with all the news in the industry. Please keep your comments and questions coming.

Courses in dire need of scenic environment

By Stephen R. Rusher

I have actively played golf for 25 years, having been brought up in the sport. Having played various courses throughout Louisiana and Mississippi, one very noticeable condition has emerged.

As golf facilities have been built and entered maturity, the new development and construction surrounding them erodes the visual quality and uniqueness of the course.

Additionally, the course's functional requirements of parking lots, roads, utility buildings and other elements contribute to overall degradation of the course's visual quality to the masses.

These elements are a permanent part of every course. But need they be visible?

The visual image, beauty or character each course project is tied directly to its scenic surroundings.

If no scenic environment complements a course, it has no particular uniqueness and, more importantly, the level of enjoyment experienced is greatly diminished.

A major golf course design flaw in practice today that supports this view is the virtual or near total elimi nation of the vegetation during construction. When this occurs, the course is forced to rely solely on off-site plant material to help create its visual image and character. Then, because of the subsequent peripheral development, this off-site plant material is routinely and systematically reduced to a splattering of miscellaneous trees and shrubs that have no real meaning or environment appeal.

The point here is that golf courses in this country would benefit immensely from relying on their own plant material to create, enhance and preserve their uniqueness because plant material in general and trees specifically are the only physical elements that create scale, add interest and create the unique ness that golf courses strive to achieve.

Let's face it: golf course construction is about as environment ally conscious as brush clearing. No wonder, then, that the visual quality of many golf courses resembles that of an airport.

There are more than 140,000 par 4 holes in the United States alone. What separates the good holes from the crummy? Beauty? Scenic value? Uniqueness? Visual integrity or character? Aesthetics? Are they enjoyable holes that are fun to play? Is it fun to be in the hole's design and its relationship to the natural environment that creates the uniqueness and the unforgettable image in your mind?

The intuitive, creative and "plant-wise" designer is an asset golf needs.

12 October 1991

GOLF COURSE NEWS
Cape Cod Study director defends findings

To the editor:

The article on the New York at
torney general's report attacking
golf courses was balanced, thor-
ough and interesting (GCN, Sept.
15, pp. 1, 7, 18).

The hope for a summarized state-
mements made by one of the study
authors, Dr. Michael Sargan, at-
tacking the Cape Cod study, was
the director of the study, and first
or sole author of the two articles
published on it.

I would like to respond to his stanzas.

Some of the wells were dug too
depth to detect surface applied pes-
ficides.

This is an incorrect statement for
several reasons. First, all monitor-
ing wells ... were screened at or
just below the water table (Cohen et
al., Ground Water Monitoring Review
10 (1), 150-172, 1990). In other words, the sampling points
the screens) could not be placed
any shallower. Second, the average
depth to water in non-background
(non-central) wells was 21 feet at
Bass River, 35 feet at Falmouth, 6.5
feet at Eastward Ho, and 10 feet at
Hyannisport. The range was 5.28-
33.6 feet.

I have been working in the field
of pesticides in ground water since
1979 and do not know anyone who

would consider these depths "too
deep," especially when one consid-
ers the sandy subsurface.

Third, these depths are similar to
ground water depths in the areas
discussed in the "Toxic Fairways" report, the subject of the GCN
article.

For example, in our review of
dichlor in ground water (Lorber,
Cohen & DeBuchanan, Ground
Water Monitoring Review 10 (1),
127-141, 1990), we summarized the
approximately 12,000 detections on
Long Island. One study cited in our
text documented significant detect-
gs in ground water around 100
feet deep, much deeper than the
Cape Cod sites.

"Others (wells) were placed up-
stream from where the pesticide
applications were made, so that the
chemicals had no chance of flowing
past the well ..."

If Dr. Sargan is referring to the
background wells, he is incorrect and
I appreciate the compliment. That
is the point of background wells. If
he is describing the green, tee or
daylight wells, then that is not a a
correct statement. All those wells
were drilled at the edge of those
areas so that ground water would
be sampled that was influenced by
turf management of greens, tees or
fairways as appropriate.

Perhaps he is noting correctly
that we did not place our wells as
one would do in a hazardous waste
landfill study. In such investigations,
one normally places most of the
monitoring wells downgradient of
the whole site, near the property
boundary.

In our study we were interested
in determining whether there were
differences in ground water quality
under areas with different turf
management programs. And there
were differences, as noted in the
first paper cited above, as well as
the one published in Golf Course
Management 58 (2), 26-44, Febru-
ary 1990.)

"The Cape Cod study authors
acknowledged the deficiencies..."

Anything is possible, but this is
news to me. I have never discussed
this with Dr. Sargan, nor has my
environmental consultant, Joe Senia.

The only deficiency we ever ac-
nowledged was in the method used
to install the wells. The drive-and-
wash method may have caused
vertical cross contamination down
the boreholes, thereby increasing
the number of detections than we
otherwise would have seen.

I hope this clarifies the issue.

Sincerely,

Stuart Z. Cohen, president
Environmental & Turf Services
Dr. Sargan's comments bring up
discussions about pesticides on
golf courses that are not often
mentioned or considered in the
course of regular maintenance. It is
important to address these issues to
ensure the safety and health of those
who use the courses as well as the
surrounding environment.

It is unfortunate that there are
differences in the findings and
interpretations of studies conducted
on golf courses. This highlights the
necessity for more research and
better collaboration among those in
the field.
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The Model 252 and the 3-wheel 152 have proven themselves to be reliable drives for many thousands of golfers. Both models feature a brake system that’s virtually maintenance-free, an efficient, economical electrical system, and super-strong front suspension.

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UK's 'brain drain' to Europe said serious

**Vera Putney**

United Kingdom groundsmen and greenkeeper associations are aware of a "brain drain" to Europe because of increased golf interest there, but think the flow of expertise is of no great concern at the moment. When some may try to discourage exodus, many key figures in these specialized fields view the trend as more beneficial long run than harmful. The bottom line may be bigger paychecks and long-overdue recognition.

What greenkeepers overseas need is a Walter Hagen, observed William H. Bengeyfield, former national director of the United States Golf Association's Green Section.

The American golf professional took Europe by storm in the Roaring Twenties. He hobnobbed with kings and queens, startled the British and rocketed the pros from back door to celebrity status. The Haig's irreverent approach to society's strata set up immediate acceptance of his peers' status role.

Greenkeepers in the British Isles too long have been content to stay in the background despite their prominent part in the day-to-day success of course operations. They've lacked the dashing, glamorous image and a leading spokesman.

Perhaps that mantle can't be assumed, but they can speak fairly forcefully by taking their talents to the highest bidder. Club members, conceded to be astute businessmen, understand that economic message.

As it stands now, a rather generous annual salary for a highly regarded greenkeeper is in the neighborhood of $25,000, Bengeyfield ventured.

Derek Walder, secretary for the Institute of Groundsmanship, based in Milton Keynes, UK's "brain drain" to Europe said serious

---

**Send data from independent water studies at courses**

To add substance and bulk to the limited amount of research data on turf chemical runoff, Golf Course News is asking superintendents nationwide to let us know if a ground water or surface water study of any kind has been or is being done at their course.

"The Cape Cod Study was a good one, but it was only one study. There is a critical need for data on the impacts of turf chemicals on our water environment," said Stuart Cohen, Environmental & Turf Services, Inc., who directed the Cape Cod Study.

Cohen said he has discovered several instances of isolated, limited golf course runoff or leaching studies. Those were usually conducted as a result of state or local requirements for special circumstances, such as gaining a zoning permit.

"When the results of studies are favorable, there is no press release from the state agency," said Cohen. "Since known studies have been held and has not been a media cry of 'dangers of golf courses,' my guess is that these studies are favorable to the industry."

Superintendents are asked simply to write, listing:

- a contact name and phone number;
- the pesticides being monitored;
- whether it is a surface or ground water study;
- if monitoring wells were installed;
- if the study was a condition of a permit; and
- if a final report was issued.

Cohen, who will follow up on this initial information, has agreed to compile the results and summarize them in an upcoming issue of Golf Course News. Knowing superintendents may be too busy to expand on the study, Cohen asked that they at least identify a contact person and the timeline during which the study was done.

"Most studies may have just a handful of data," he said, "but taken in total, it could be a real impact. Knowing the information could give an understanding of the whole picture of the multi-year impact of golf courses on the environment."

People are asked to send the information to Cohen at Environmental & Turf Services, Inc., 11141 Georgia Ave., Suite 208, Wheaton, Md. 20002.
Hammock Dunes duties a dream come true for Portz

By Vern Putney

Palm Coast, Fla. — At 16, Dave Portz traded life on a farm in his native Emmaus, Pa., for maintenance work at Wedgegood Country Club in nearby Allentown, but he’s never left the soil and the outdoors he so enjoys.

The breathtaking beauty of the private oceanside Hammock Dunes Club is a far cry from Portz’ roots. But the personal magnetic attraction of location and unique challenge from a course superintendent’s standpoint makes for a heady combination.

Noting Portz’ love of the environment and his desire for course improvement, Wedgegood superintendent Dave Linde encouraged Portz to pursue a career in golf.

Portz agreed, to his own and eventually Hammock Dunes’ mutually good fortune.

Portz graduated from Penn State University’s winter course in turfgrass management in 1973, then accepted a position with Brookside CC in Allentown. He remained there 17 years before succeeding the lure of Florida.

Relocation to the South was somewhat difficult because of Portz’ limited exposure to Southern grasses. But Fred Kleinfelder, director of golf maintenance for ITT Corp., hired Portz to grow in Gary Player-designed Cypress Knolls, Sunsport’s fifth golf course in a 2,250-acre community featuring five miles of oceanfront.

Soon afterward, Hammock Dunes’ superintendent Dwight Kummer switched to Arnold Palmer’s swank Bay Hill Country Club in Orlando. Portz was tapped as Kummer’s replacement.

It was just the job Portz coveted — ocean breezes, continuous salt air, natural dunes, sandy soils and high water tables affording opportunity to test his skills in managing grasses in a demanding but rewarding setting.

Hammock Dunes ownership stresses protection and care of surroundings. That’s nicely tailored to Portz’ philosophy. He has taken full advantage of that support and remarkable course design by architect Tom Fazio of Jupiter.

Fazio’s environmentalist view is reflected in his fitting the course to the site’s natural beauty and characteristics. He enhanced beach, dune, wetlands, marshes and forest with rolling contours and elevated greens and tees, extending the dune line through the course and creating dramatic ocean views and play.

Portz intends to maintain natural integrity while providing the best possible playing conditions. His focus is on cultural practices — frequent vertical mowing of greens, tees and fairways, additional aeration to help reduce thatch accumulation, and frequent top dressing.

An Integrated Pest Management program is monitored, and the use of chemicals is strictly limited. The course’s monitoring wells are tested regularly for products certified for use.

Each product must be evaluated by Hammock’s safety department, headed by Candy Kilpatrick, and the environmental department, headed by Frank Meeke. This strict policy has necessitated using other resources to produce quality turf.

Fertility levels also are monitored carefully. Sandy soils and the amount of water necessary to maintain an oceanside course allow for more than average leaching. Therefore, Portz found that lighter and more frequent application suited his program. It provided less chance for excessive nutrients to reach the water table.

With the expertise of assistant Jim Lycans and a staff of 22, Portz feels his par 72, 18-hole course at Hammock Dunes is kept in championship condition.

The facility encompasses 120 acres of grounds and includes a formal clubhouse directly on the ocean.

Hammock Dunes, opened in April 1989, was nominated that year for Golf Digest’s “Best New Private Course” award, named to 14th place on Florida’s best course list by Golfweek and named to that publication’s top 50 courses in the Southeast.

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* 1990; Par Aide Products Co., St. Paul, Minn.
Hurricane Bob leaves Cape Cod bent and brown; grounds crews still cleaning up

Continued from page 1

on Buzzards Bay.

New Seabury Country Club, a week away from hosting an American Junior Golf Association Tournament, was left with as much as a foot of sand and another foot of salt water.

Hyannisport Club lost five greens to severe salt damage despite hectic efforts to save them. Thousands of trees — including 500 at Kittansett Club and 800 at New Seabury CC alone — were snapped or felled by the winds.

Woods Hole Golf Club saw almost the entire sand and trees lining the 15th hole come down.

New Seabury CC faced the most immediate problem — preparing for the tournament.

The eye of the hurricane passed directly over the front nine of the facility's famous Championship course, depositing thousands of yards of sand and pockets of water, completely covering the cart path that runs along the ocean, and changing the shape of the 2nd and 3rd holes.

The storm struck in the morning and was gone in hours. In the midst of it, superintendent Tommy Colombo drove to the 1st tee and saw "the 2nd and 3rd fairways were now ocean, with waves crashing down. The 2nd through the 6th holes were totally inundated."

Colombo and Danny Coon, supervisor of golf operations and management director, set an emergency plan in motion.

Before nightfall, the course's three 500-gallon-per-minute pumps were draining salt water from the three most affected 3rd and 15th fairways. Wednesday night a 1,200-gpm and a 800-gpm pump were pumping the ocean back into Nantucket Sound.

Assessing damage to the rest of the 36 holes with retired University of Massachusetts Professor Joseph Troll, Colombo was "kind of in shock." They found tall pine trees alone—were snapped or felled by the winds. The 1st, 5th, 6th, 7th, and 10th were totally inundated."

Blodgett said: "The greens were under water for a day, until the tides were out. Then it was all hand-shoveling. We had seven to eight inches of debris on all the greens. The salt killed them."

Blodgett spike seeded eight to 10 different ways into six ruined greens and on damaged tee areas. And at nights he had "50 to 60 people working on the course — loggers, loaders, backhoes. I had to rebuild the 3rd hole with cranes." He used a blend of ryegrasses because they need less water than bentgrass. Compared to Bob, Hurricane Gloria in 1985 had only flooded about 60 percent of the 3rd fairway and it was wet for only one day, said Blodgett, "so to compare the two there was so much water and you can only do so much, so fast."

Meanwhile, at Kittansett Club, superintendent Lenny Blodgett faced a massive task of his own.

"Water was five, six feet over the 1st, 2nd, 5th, 6th, 17th and 18th fairways. The 1st, 5th, 6th, 7th and 10th were destroyed, and parts of the other two," Blodgett said.

Since he has no irrigation he had to rely on rainfall. Even though Hyannisport Club, just 25 miles to the east, received 1-1/4 inches of rain, Kittansett got none.

"I'm slicing, seeding in, putting on gypsum and a lot of starter high phosphates on the fairways, if it ever does rain," Blodgett said.

He said the greens were under water for a day, until the tides were out. "Then it was all hand-shoveling. We had seven to eight inches of debris on all the greens. The salt killed them."

Blodgett spike seeded eight to 10 different ways into six ruined greens and on damaged tee areas. And at nights he had "50 to 60 people working on the course — loggers, loaders, backhoes. I had to rebuild the 3rd hole with cranes." He used a blend of ryegrasses because they need less water than bentgrass.

"I'm waiting for nature," he said. "I'm watering lightly three or four cycles a day. I've put on Subdue so I don't get damping off on the seed."

"I've had a lot of coastal storms but not this bad, except Gloria because Gloria didn't have rain afterwards. If I had had rain it would have saved a lot. Plus I was out of power (Bob) so I couldn't run my booster pumps."

"We put down gypsum, prayed for rain, got 1-1/4 inches of rain the next day. We watered more aerated once with big tiges to pull out material at a pretty wide space; aerated again with fine real, solid tines to poke more holes, get more water in and close in the big areas left a little bit."

But, a couple of days later — "just when it looked like the course would recover" — the damage showed.

That left Passios, assistant Mark Egan and their crew working to restore the lost turf.

OTHER COURSES WERE LUCKIER

Henry Coffin III, superintendent at Sankaty Head Golf Club in Siasconset on Nantucket Island, said the handful of courses on the island were spared serious damage because they are on the high side of the island.

"We had high winds and all our trees turned brown from the salt spray. We lost just three big pine trees," Coffin said.

The Taunton River overflowed and submerged Fall River Country Club's 10th fairway, half the 6th fairway, and the 3rd fairway halfway up the apron of the green.

Thomas Olson's crew treated for salt, watered a lot, and got their hoped-for rain for two days after Hurricane Bob.

In Maine, the storm mostly left behind limbs and other debris from trees.

One major exception was Falmouth Country Club, where superintendent Kevin Ross said his crew had to contend with an overflowing Presumpscot River that inundated the green half of the 13th hole and one-third the tee half of the 14th hole.

The major financial damage, Ross said, was done to his irrigation control system. Three satellite clocks, costing $1,300 apiece, were submerged and one controlled ruined.

Beyond that, Falmouth suffered severe bunker washouts, some cart path destruction and loss of 75 to 100 trees that were snapped or uprooted.

Just when the water subsided from the fairways 48 hours after a storm, a rainstorm dropped another inch and a half of water and "compounded everything," Ross said. "We were back in the slosh again."

He said his crews had to wash off silt from the river with high pressure hoses, then aerate heavily.

Hodge and aides won't soon forget, though, the "Sheet of White" rain chasing them to cover.

Nominations sought for turf awards

SAN DIEGO, Calif. — The Sports Turf Managers Association is seeking nominations for its annual awards program. Awards will be presented at its annual meeting here Dec. 4-7.

Award categories are: Football Field of the Year; Soccer Field of the Year; Outstanding Commercial Affiliate; Excellence in Research, and Lawn Ranger Award for best groundsman or overseer.

Sports Turf Managers Association membership is an eligibility requirement. Nominations should be submitted to Greg Petro, Waukegan Park District, P.O. Box 708, Waukegan, Ill. 60079. Attn: STMA Awards.
Schwall becomes 1,200th CGCS

With David R. Schwall of Sky Top Lodges in Sky Top, Pa., joining the ranks, there are now 1,200 certified golf course superintendents.

Schwall completed the testing process required to become a certified golf course superintendent through a program administered by the Golf Course Superintendents Association of America.

"Few people realize the skills, talents and education needed to manage a golf course today," said Stephen G. Cadenelli, president of GCSAA.

"For 20 years, our certification program has spurred superintendents to new heights of expertise and given the golf community a better understanding of the level of professionalism required to provide great conditions for great golf."

To earn the CGCS title, the individual must have had five years experience as a golf course superintendent and be employed in that capacity.

The candidate must pass a six-hour examination covering turfgrass management, pest management, financial and organizational management and the rules of golf.

In addition, an on-site inspection of the candidate's golf course operation is conducted by two certified superintendents. Certification must be renewed every five years.

Wise duties at St. Lucie West expand, include maintenance for entire project

PORT ST. LUCIE, Fla. — St. Lucie West's Richard C. Wise has added project maintenance for the Thos. J. White company's 7.5-square-mile development to a growing list of maintenance and improvement duties. His new title is project manager.

The 38-year-old Wise has managed golf course operations since St. Lucie West opened its first 18 holes in October 1988. Since April he has been responsible for the care and keeping of the baseball fields in and around Thomas J. White Stadium, the Florida home of the New York Mets and Class A Florida League St. Lucie Mets.

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UK superintendents leaving for fertile European ground

Continued from page 15

Buckinghamshire, England, thinks the threat of skilled shortage will lead to new awareness by employers of the value of Walder's fellow professionals.

That, in turn, will mean a new look at current wages. "Anywhere grass is grown," he declared, "our members are prominent. Far from just moving around plants and ornamental planting shrubs and decorating, they are recognized in Europe as distinctive craftsmen. They are paid accordingly."

"If this movement means an economic upturn for greenkeepers, so much the better. The paycheck is important."

The British International Golf Association echoes that stand. Several members of that greenkeeper or course superintendent group have been attracted to the greener cash fields of Europe.

Jack McMillan may be the leading example. The first president of the English & International Golf Groundkeepers Association and past chairman of the British & International Golf Greenkeepers Association "dected" to greener, more financially fertile pastures and golf course consultant status in the spring of 1990. He's since been involved in a number of major projects in Europe and the UK.

Prior to his invasion of Europe, McMillan had been for nine years head greenkeeper at prestigious Sunningdale Golf Club, Surrey, England. For more than 30 years a head greenkeeper, he has trained on-course 20 of England's head greenkeepers, and authored many articles on greenkeeping.

While a number of high specification, quality golf courses have been constructed in France and Germany, McMillan feels that, in order to sell the game of golf to the French and German masses, they must be able to play at reasonable cost.

He believes good, hard-wearing public courses could be built, reasonably priced, along the lines of the many public and local authority courses in the UK that give so much pleasure to so many persons.

Scottish McMillan ruefully gives the green fee price "prize" to Pebble Beach, Calif. He played that world-renowned links for $200. "I thought I'd bought a 'butter' course are the answer, he believes."

More "bread and butter" courses are the answer, he believes. At present, too many are out of pocketbook reach for the general golf public, he declared.

As in much of the Northwest portion of the United States, many courses in the UK are played hard in a comparatively short seasonal span. Because of the climate, there is insufficient natural recovery time.

Switzerland, he noted, is leaning more to golf, but "tremendous snow" is discouraging.

While there may not be a strong greenkeeper organization in Europe, individuals are surfacing with strong opinions and leadership qualities. Among them is Jaime Ortiz-Patino, president of Valderrama Golf Club, a course in Spain Bengeyfield and others considers the best conditioned in Europe.

Six years ago, Petino wanted to build an American-style course. Green Section's Bengeyfield responded to his consultant inquiry. This led to other Spain course projects.

Petino has been quick to lend a helping hand to others golf-minded. He supplied materials, equipment and stolons for the first public course in Spain, being built next to Valderrama in the town of Guadialo by townspeople. U.S. architect Robert Trent Jones Sr. contributed course aid in the form of staffers experienced in grading.

There has been some mutual disillusionment among some Spanish golf club officials and aspiring young course superintendents from America, lured overseas with glowing promises.

Many Americans lacked the background to handle course problems, and others complained of being short-changed financially. Leading British professionals have taken a leaf from the carefully kept notes of top-notch U.S. pros — South Africa's Gary Player, Australia's Greg Norman, Spain's Seve Ballesteros and Germany's Bernhard Langer.

According to Bengeyfield, they are venturing rather deeply into course design.

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To produce the only completely proven, longest lasting, hardest working, and
Southeast

Cecil C. Johnston is the winner of the 1991 Florida Golf Course Superintendents Association’s Distinguished Service Award, which honors a member for outstanding achievement in promoting golf course management.

Johnston, now working in Thailand, will receive the award during the GCSSA Convention in New Orleans in February.

A longtime volunteer editor of the Florida West Coast Association newsletter, he has been president of the West Coast group and the FGCSA, where once there were no organized chapters, there now are three.

Recipients of the FGCSA President’s Awards for lifetime service were Tom Mascaro, John Hayden, Harvey Phillips, C. R. "Bud" Pearson and Carl Smith.

Mascaro, currently a consultant with Turf Tec International, Miami, designed and built 21 products for turfgrass areas. He has been Pennsylvania Turfgrass Council president, received GCSSA’s Distinguished Service Award in 1976 and The USGA’s Green Section Award in 1971. He edited the Florida Green’s monthly column for 10 years.

While continuing consulting work with Jack Nicklaus, Smith helped organize the FGCSA’s Palm Beach chapter. His expertise in the agronomy field expanded to include training many turf students.

South Central

SOUTHERN TURFGRASS SHOW

MEMPHIS, Tenn. — The Southern Turfgrass Association’s annual conference is due Nov. 17-19 at the Memphis Cook Convention Center.

More than 100 exhibitors will provide firsthand information on thousands of turfgrass products. In addition to these displays of new techniques and equipment, there will be educational seminars.

For more information, call Carl D. Case, STA director of administration, 615-794-6689.

West

CALIFORNIA LAW

A California regulation in effect July 1 requires several new employee protection measures.

The Illness Prevention Program requires that employers train workers on the hazards of employment, including those associated with equipment operation.

The new law also requires inspections of facilities and equipment to prevent injuries.

The regulations contain “whistle blower” provisions concern the reporting of unsafe working conditions and encourage formation of safety committees within the workplace.

PACIFIC COAST SHOW

SEATTLE, Wash. — The third annual Pacific Coast Turf and Landscape Conference and Trade show will be held Dec. 3-4 at the Washington State Convention and Trade Center.

Western Washington’s main event, hosted by the Western Washington Golf Course Superintendents Association, will include 33 educational seminars and a two-day trade show.

The seminars will be featured in three separate tracts covering a wide variety of topics. Tract I will encompass seminars designed for pesticide applicators. Licensed pesticide applicators can receive up to nine recertification credits for attending the seminars in this tract.

Keynote speaker, Dr. Robert Shearman from the University of Nebraska, will discuss “Integrated Pest Management - How Can We Make It Work?” Other topics include an EPA Look at Contamination Sources, Safe Pesticide Handling, and Causes and Symptoms of Plant Damage.

Tract II will contain inspirational and educational sessions that cover the daily work challenges other than pesticide use. Dr. Bree Hayes, owner of Management Consulting, will speak on “Professionalism: How To Think Like, Act Like, and Be One.” This tract also includes tree and ornamental care and turf rejuvenation.

Tract III will cover hands-on equipment operation and maintenance for mechanics and operators that do their own shop work. Topics will range from aerification and topdressing to drip irrigation systems and tank mixing, calibration and nozzle selection.

More than 100 manufacturers and distributors of turf and lawn care products, supplies and services are expected to exhibit at the trade show.

For more information, contact Scott White, Convention Services Northwest, 1809 Seaview Ave., Suite 1200, Seattle, Wash. 98101; 206-282-9198 or 800-275-9198.

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GOLF COURSE NEWS

CIRCLE 4121
Bob Farren's motto is "Be Prepared." So, Farren, assistant director of golf course maintenance for Pinehurst (N.C.) Resort & Country Club, is already planning for 1994, when Pinehurst No. 2 will be the site of the U.S. Senior Open. He is not only preparing the renowned No. 2, he has gotten in the spirit with a new customized license tag.

Ohio show taking form

CINCINNATI— More than 4,000 industry professionals are expected to attend the Ohio Turfgrass Foundation Conference and Show, Dec. 2-5. Athletic turf, lawn care and budget concerns will be prominent topics. Athletic turf focus will be on grass selection, marking and painting, reinforcement materials and improving methods of drainage. Cutting costs, defining field playability, the care of skin areas and safety and liability also will be discussed.

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- Low bulk density (.5-.6 g/cc) - improves both water and air permeability.
- Low E.C. (.1-.4 mmhos/cm) helps to eliminate salts.

For information on ISO-LITE or a Distributor in your area, call NEW GOLF CONCEPTS, INC.
1-800-533-7165
El Conquistador golf course transformed from development to semi-private

I couldn’t get you a tee time in the next three weeks even if you were my mom,” Wells confessed.

The owners, IIT Sheraton and Metropolitan Life, have raised green fees to try to cut demand at the Sunset Course, which is open to daily-fee play; the Sunrise Course, played by homeowners in the original development; and a nine-hole course played by hotel guests.

Golf course architect Jeff Hardin, who designed the course in 1982, was in charge of a redesign that featured several steps to quicken play. As a result, officials have been able to set tee times seven minutes apart.

A seven-year improvement program began with spotting new tees all around. Sheraton rebuilt the 12th hole on the Sunrise course, and the 1st, 7th and 16th on the Sunset Course. The 17th on Sunset was rearranged. The new management gave its people the task to make over the course to play faster, then gave them the room to perform it. The goal was accomplished in several ways:

• Desert broom, which is extremely bushy, has been eliminated from the roughs. In its place are decorative cactuses and desert flowers.
• Signage was improved. Markers are clearly visible 200 yards away, so there is no hunting for the next hole.
• Wells spent $500,000 for new equipment "selected to enhance playability rather than

Paintbrush exhibits Hurdzan’s artwork

The 6th hole displays the beauty of The Paintbrush course—the darling of Trivial Pursuit’s Chris Haney and Scott Abbott that is set high above the city of Tucson.

The Paintbrush, built on 186 acres, cost a fraction of that amount in the neighborhood of $5 million in Canadian dollars, says Hurdzan project manager Dana Fry... But! Fry enumerated features that will characterize the 6,700-yard, par 72 Paintbrush as an extraordinary design and as a links course on the order of the classics in Scotland.

“Not only do we have a new name, we have a new look,” Hurdzan said. "It is a link to the past, and also to the future."

The course’s original architect, Robert Muir, designed the course in 1967. He was inspired by the links courses in Scotland and the classic St. Andrews layout at the University of Michigan, which he had played as a student.

“Muir designed the course to be a links course, which is the way we wanted it to be,” Hurdzan said. "It is a link to the past, and also to the future."

But the Paintbrush is not just a throwback to the past. It is also a forward-thinking design, with features that are unique to the region.

The Paintbrush’s 18th hole, for example, is a par 5 that features a sand bunker on the left side of the fairway and a bunker on the right side of the green. The bunker on the left side of the fairway is a "dogleg" bunker, which is designed to slow down the ball and make it more difficult to get onto the green.

The Paintbrush also features a "dogleg" bunkering system on the 9th hole, which is a par 4. The bunkers are shaped like a dog’s leg and are designed to slow down the ball and make it more difficult to get onto the green.

The Paintbrush’s 18th hole, which is a par 5, features a "dogleg" bunker on the left side of the fairway and a bunker on the right side of the green. The bunker on the left side of the fairway is a "dogleg" bunker, which is designed to slow down the ball and make it more difficult to get onto the green.

The Paintbrush also includes a "dogleg" bunkering system on the 9th hole, which is a par 4. The bunkers are shaped like a dog’s leg and are designed to slow down the ball and make it more difficult to get onto the green.

The Paintbrush is designed to be a links course, which is a type of golf course that is characterized by narrow fairways and undulating terrain. The Paintbrush’s design includes many of the features that are typical of links courses, such as narrow fairways, undulating terrain, and many bunkers.

Builders association works to define future

The Golf Course Builders Association of America has a new name and a special new committee under its new leader.

Executive Director Philip Arnold said the cosmetic change is adding “Association” to the group’s name. The substance, he believes, will come from the new strategic planning committee.

Created to define the GCBA’s mission in a number of areas, the panel is composed of Arnold, President Perry Dye, Paul Eldridge of Wadsworth Construction, Paul Clute of Clute Construction, Jim Kirchdorfer of Irrigation Supply Co., Doyle Jacklin of Jacklin Seed, Donald Truttman of Buckner, Jerry Perman of International Golf Group and John McDonald of McDonald & Sons, Inc.

The committee will meet Oct. 24 or 25 in Chicago to decide such questions as a business plan, decide whether the group should be all inclusive or restrictive, whether to put together a publication or construction statistics or just service its members, and what areas of the golf industry the GCBA should affect.

“I’d like something to present to our members at the annual meeting in February,” Arnold said.

Arnold said the GCBA has grown from 72 to 95 members in the last few months. Fifty attended the annual summer meeting.

New golf course construction 1985-90
Winds blow favorably for weather stations

By Peter Bias

Faced with water shortages and rising water costs, superintendents are increasingly turning to weather stations as integral parts of their water management programs.

The weather station collects and records data on temperature, wind speed and direction, solar radiation, relative humidity and rainfall. It uses that information to determine evapotranspiration (ET) rate—the amount of water lost due to plant usage and evaporation from the soil. Using the ET figure, plus personal knowledge about his own course, a superintendent can more accurately determine how much water to put on his turf daily.

"Just about all new courses are putting them in. They are becoming so important that many government agencies are requiring them before issuing golf course building permits. They want to see something better than just human judgment," said Roger Gordon, president of Gordon's Irrigation Consulting, which has helped install systems at Pebble Beach, Spyglass, Poppy Hills and Spanish Bay on the Monterey (Calif.) Peninsula, PGA West in Palm Springs, Calif., Cherry Hills in Denver, Desert Inn in Las Vegas, Nev., and many other famous courses throughout the world.

Weather stations range in price from approximately $5,000 to $15,000. Most are being installed on new courses, although they can be retrofitted to accommodate existing irrigation systems.

"An extra $5,000 or $10,000 is no big deal when you're paying $1 million or more for a new irrigation system. It can be a little harder to sell to a greens committee at an older course with an existing system," said Ray Davies, superintendent at Virginia Country Club. "I wish I did," he answered when asked if his course had one.

"The information can be collected directly from the station on a daily basis or, as is increasingly the case, it can be tied into the course's computerized central irrigation control system. The weather station can automatically determine how much water needs to be replaced. But superintendents generally use the information as a guideline rather than a final number. "Superintendents are reluctant to turn total control of their watering over to a machine," Gordon said. "They should monitor the system until they make sure it is operating correctly. They should make their daily rounds and look for overly wet and dry areas. Then make their corrections accordingly."

Added Kurt Thompson, Buckner's national sales manager for golf: "We use the premise that these guys (superintendents) are professional turf managers in tune with the needs of their grass. Besides, it's dangerous to use empirical data alone. Our superintendents use the weather station as a reference tool."

"Weather stations are limited in that they measure conditions at a single spot. Manufacturers recommend placing them in an area that is typical of most of the course. "The ideal spot is in the middle of a par-4 fairway. But that's hard to do," Gordon said. "Even if a fairly typical site can be found, the station still measures the ET rate in that single location. And as any superintendent will tell you, there can be many microclimates within a single course. "Weather stations are very useful, but they are not perfect," said Tim Deutschter, superintendent at Tijeras Creek Golf Club in Rancho Santa Margarita, Calif.

The 18-hole public course installed a weather station when it opened last October. The course's computer divides the course into 17 distinct areas and uses the ET rate and Deutschter's expertise to determine watering rates for each location. New technology will soon expand that to 80 specific areas. Despite the limitations, weather stations are "definitely worth the investment," Deutschter said. "They can help save a tremendous amount of water."

"They help minimize water use, no question," concurred Kenneth Solomon, director of the Center for Irrigation Technology at California State University at Fresno. "Superintendents tend to over-water since too little water can mean their jobs. But over-watering can cause many problems related to disease and fertilizer leaching." Government agencies and television stations were the only ones that could afford weather stations before the mid-1980s, according to Bob McWhirter, golf manager with Rain Bird. They came into vogue on golf courses in the mid-1980s, about the time computer-controlled irrigation systems started coming on line and water shortages began hitting the headlines, he added.

Some of the early models worked poorly. "I remember one of the first ones we installed," Gordon recalled. "It was in sandy soil and we had to replace 4.4 inches of water the first week. There is no place in the world that needs to replace that much water in a single week. The last three or four years we haven't seen anything like that."

The newer models are much more reliable and affordable, McWhirter agreed. Technological advances, such as solar-powered batteries and telephone interfaces, allow stations to be placed farther from the central control station. Speed and storage capacity have been increased.

Still, technology has not overcome the need for routine maintenance. "Failure to maintain them is the biggest problem we see with weather stations," said Jon Williams, golf project manager with Toro. "When someone reports a problem, the first question we ask is, 'When was it maintained last?'" "We see courses spend thousands of dollars for equipment, but forget to do some simple things. Some of the sensors have to be replaced every six months. Leaves and bird droppings can mess up the sensors. It takes about 15 minutes every three months. That's a small investment to maintain an expensive piece of equipment."
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Only DIMENSION® turf herbicide gives you true season-long control of crabgrass—with just one application. New break-through chemistry keeps Dimension working, month after month.

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Other Preemergence Herbicides*

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Preemergence and postemergence crabgrass control in one product.

The advanced chemistry in Dimension also introduces both preemergence and postemergence activity in one product. No other turf herbicide gives you so much flexibility.

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Spurge Oxalis

Permits fall overseeding. The break-through chemistry used to formulate Dimension gives you yet another advantage. You can conduct normal fall overseeding three months after an application. Dimension eliminates the need to choose between season-long control and overseeding safety.

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You can apply this unique, new herbicide over a variety of turfgrass species without fear of discoloration or root injury. A wide range of cool- and warm-season grasses have shown excellent tolerance to Dimension. You can even use Dimension on bentgrass without injury. In addition, Dimension won't harm adjacent ornamentals, trees or shrubs when used as directed.

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Dimension herbicide doesn't stop with crabgrass. Its broad-spectrum activity targets a variety of annual grasses and broadleaf weeds. This control includes foxtail, goosegrass, spurge and oxalis.

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“I get judged on the quality of my turf. If I can cut the weed population to 10 percent or less, it makes me look better. With Dimension, I’m getting that control and the turf safety I need.”

Tom Werner, CGCS
Superintendent
Colonial Country Club
Fort Worth, TX

“The best thing about Dimension is if you get your application down late, you’re still going to get control of crabgrass. If we have Monday events and can’t spray and then the weather turns on us, or we wait another few weeks, we still get control in one application.”

Randy Brehmer, CGCS
Superintendent
Bear Slide Golf Club
Cicero, IN

“Postemergence crabgrass control is a very ‘iffy’ situation. The advantage of a material that can be applied both pre- and postemergence is big. Dimension does that. We saw excellent results with no detrimental affect to desirable turf in postemergence applications.”

Don Brown, CGCS
Superintendent
White Manor
Country Club
Malvern, PA

“I like Dimension because of the flexibility of application. Timing isn’t quite as critical because it can work pre- or postemergence. With other products, we spray around April 1 and we’re back a second or third time. With Dimension, we can put it down in mid-May and get good results in just one application.”

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Different clientele meant course changes at El Conquistador

Continued from page 23 for mass mowing.

• Cutting heights were lowered—fairways from 3/4 to one inch down to 5/16, and roughs, from three inches to 1-1/4 inch. Greens are being cut to a scant 9/16 of an inch and tees to 3/8 of an inch.

This is a challenge when temperatures soar to 120 degrees in June. But brown spots are hard to spot, thanks to crew vigilance.

“Some heads had to overwater in order to lay down enough liquid along the rest of the line,” Wells said. “We overdose in late September—early October so we’re ready to play intensively by Thanksgiving, when most of our winter visitors return. By then the course is in picture postcard condition.”

“Plan as far as three years out, but keep flexible so we can make changes as quickly as in just one week.”

For example, if weather conditions indicate the possibility of a pathogen problem the next day, they won’t wait for pythium to show but will make a preventive spray that day.

When it rains in Tucson, water is a problem. Storms are generally short, intense, and always a problem in desert areas,” Wells said. “You have to be vigilant considering dawdling players.”

“We handle July with a lot of shovels, rakes and backhoes to clean up rocks and dirt washed into playing areas,” Wells said. “Our goal is simple: Lose no grass.”

Despite the 320-plus days of sunshine, Wells keeps a daily weather and temperature log, evapotranspiration rates, and other data to ensure the course stays in good condition.

“We’ve had no serious pathogens hit the course in the past two years. We had a little fairy ring last year. That’s a water issue, and always a problem in desert areas,” Wells said. “We would appreciate your help in updating this section. To contact us call 207-846-0600 or write Golf Course News, P.O. Box 997, Yarmouth, Maine 04096. Under “Type” — D = Daily Fee; P = Private; M = Municipal.

Courses newly approved in U.S.

Golf Course News is publishing these lists monthly. The list below includes courses that have been approved around the country in the past month. The chart left contains the sites and contacts for new courses and renovations in the planning stages. When those courses are ready to begin construction they will be listed in this “Courses newly approved in the U.S.” chart.

We would appreciate your help in updating this section. To contact us call 207-846-0600 or write Golf Course News, P.O. Box 997, Yarmouth, Maine 04096.

Courses newly approved in U.S.
European market should open up with EEC, experts say

Continued from page 1

The rewards could be great for companies in member countries of the EC, a market 30 percent larger than the United States. And the market could grow. Several countries have applied for membership, and others are expected to follow as Eastern Europe moves from a communist to a market economy.

But for now, the changes in tariffs, quotas, technical standards, currency exchange and taxes have applied to the 12 member nations—France, Germany, Italy, Belgium, the Netherlands, Luxembourg, Great Britain, Ireland, Denmark, Greece, Spain and Portugal.

What have and will the changes mean for various golf industry suppliers?

British architect Howard Swan gave a bottom-line perspective. “It means I’ll get paid more regularly,” he quipped. “These are exciting times. Removing those restrictions will improve everyone’s confidence. We still have a recession going on. This should give developers more confidence to invest internationally.”

John Wilson, general sales manager of grass machinery for Ransomes, expects good things to come out of the changes for companies in EC member nations.

Abolishing tariffs and quotas has “made everything more equal” for companies in EC member countries, while making it more difficult for non-members to compete in that market, Wilson said.

EEC technical standards dealing with safety, noise and vibration levels are still being developed and are expected to be fairly strict. “If a company conforms to EEC standards, it should be able to meet the standards just about anywhere else in the world,” Wilson said.

The free flow of currency has made it easier to sell goods in member nations than five or 10 years ago, Wilson said.

Some progress has been made in harmonizing taxes on income, employment, corporations and payroll. It remains an ultimate goal, but one that will be extremely difficult to fully achieve, Wilson said.

“Everything has become more competitive because of the freer exchange of currency, goods and services,” Wilson said. “And it looks like there are going to be even more players.”

One of the EEC’s most difficult tasks has been adopting principles regarding pesticides. European Community-wide standards are expected to be drafted within a year and should be in effect by 1993, according to Felix Muhlebach, spokesman for Ciba-Geigy Ltd.

Farm and turf chemicals are registered together in all EC countries, Muhlebach said. No special rules apply solely for golf course chemicals.

Plans are for manufacturers to register their products with the EEC, Muhlebach explained. If the product passes muster, then it will be up to an individual country to demonstrate why a chemical’s use should be forbidden within its borders. The burden of proof that a chemical is unsafe will rest with the country wanting it banned.

Golf courses could become one of the major users of the extra acreage, providing additional markets for suppliers. Prime development land could become available in a country like Germany, where many farms are located near metropolitan areas, he added.

The trend toward fewer farms supports could be a side benefit for golf course suppliers, Muhlebach said. Without subsidies, agriculture will become more competitive. Some marginal farms will likely fail, he said.

Golf courses could become one of the major users of the extra acreage, providing additional markets for suppliers. Prime development land could become available in a country like Germany, where many farms are located near metropolitan areas, he added.

The changes will have little direct impact on club management, according to Jim Maser, chairman of Club Corporation International, one of the world’s largest golf course management companies.

“Some years ago, people feeling more comfortable about moving across borders and commercial activity increasing, tourist activity at golf courses is bound to increase,” he said.

Among the proposed EEC initiatives is language dealing with movement of heavy machinery across international borders, according to Mark Pierson of Brian D. Pierson (Contractors) Limited, an international golf course builder.

The current documentation is extensive, making it difficult for golf course builders to shift their equipment from country to country, he said. Pierson is hopeful the paperwork will be reduced, perhaps to a single document.

Importation of grass seed is regulated by government agencies in each of the 12 member nations, said Pierson. He hopes common regulations among EC members will make it easier to introduce new grass seeds in Europe.

Continued on page 27
The banding together of EC countries should also help stabilize currency values among member nations, Pierson added. That would make it easier to bid on jobs since movements in exchange rates can affect the future value of construction contracts.

"You have to look very carefully at contracts now," Pierson said. "If the currency of the country where you're working moves against you, that can mean bidding higher to protect yourself."

For controlling grassy weeds and restoring potash levels, there's no more economical, effective and time-saving combination than Country Club 7-3-22. With Team, or 19-4-6 with Team, contact your local Lebanon distributor. Or call Lebanon Turf Products at 1-800-233-0628.

Then start applying an advanced herbicide and fertilizer in just one step. And take advantage of all that free time for more leisurely pursuits.

For more information about Country Club 7-3-22

A triple green, 16-foot bunker, two-green hole...

The list of out-of-the-ordinary features goes on for Hurdzan and his Trivial Pursuit clients.

The International at Bolton, Mass., sports the largest green in the United States—27,000 square feet.) Two railroad tie bunkers and five sod wall bunkers surround it.

There is no pavement on the entire course. Crushed stone was used for cart paths, entrance roads, parking areas and walkways.

Rock piles galore, from two to nine feet high, dot the course. Many were on site before building began. Others were stacked during construction.

Numerous stone walls add definition and beauty. Most are between holes and along the entrance road. Elsewhere, a stone wall crosses the 8th hole's fairway at 220 yards off the back tee. Holes 4 and 17 have stone walls just off the side of the green and the 10th has a stone wall just behind the green.

Fescue grasses dominate the course. All in-play areas except greens are fine creeping red fescue. Out-of-play areas are 50 percent red fescue, 40 percent hard fescue and 10 percent Kentucky bluegrass. Greens are Penncross bentgrass.

The clubhouse will be built on an Irish pub theme. Haney and Abbott wanted it to have a thatch roof, but the fire marshal would not allow it. But — if a golfer wears knickers, their first beer is free, and only British beer will be served.

The irrigation system has 650 sprinkler heads.

To get as much of the touch of Scotland as possible, Haney and Abbott sent Fry, Pulpit superintendent Ken Wright and director of golf Doug Ball on a tour of Scottish courses before the Paintbrush was designed.

Fry related that St. Andrews' and Royal Dornach's superintendents said they have all sod-wall bunkers. St. Andrews has 150 and rebuilds 50 each year.

Wright's response was "We're using all fescues, why not all sod walls on the bunkers?"

From the sod-walled bunkers to the rockpiles (typical of the Scottish highlands), the stone walls and the fescues, the Paintbrush emits visions of Scotland.

Which precisely was the owners' — and Hurdzan's — intent.

Hurdzan's favorite hole? The 17th, a 545-yard par 5. From the 17th tee a golfer hits downhill to a double fairway, which is divided by an old barn foundation sunk six feet into the ground. The second shot is blind over the large sod-wall bunker. From the tee you see the stone foundation and bunker, with Toronto's CN Tower in the background.

While golf at the Pulpit is played through the air, at the Paintbrush it will be played on the ground because the ball will run so far once it lands, Hurdzan said.

"British golf course playing techniques will be helpful," he added.

Golf Course

Europe expands

variety of golf-related developments in Asia and elsewhere.

The influential European Golf Association will be prominent in one of three pre-show panel discussions emphasizing environmental problems. Of prime concern is how golf associations, course architects and designers and environmental authorities can work in harmony to control and expand the growth of golf in Europe.

United States and European architects, golf course authorities and environmentalists will huddle on guidelines on current conditions and future construction. Constraints vary from country to country.

October 1991 27
Landmark's first signature design opens to kudos outside San Diego

RAMONA, Calif. — Mt. Woodson Country Club is the first Landmark signature golf course to open. Near San Diego, the par 71,6,200 yard layout is the center of residential development by Davidson Communities. The course has housing at the perimeter, not between fairways, in the style of older California courses such as Riviera or La Costa.

"We integrated the course into a natural forest environment of mature trees, chaparral and rock outcroppings. This creates a dramatic look and requires accurate shotmaking," said Brian Curley of Landmark Golf Course Design in La Quinta.

"We have featured the existing natural rock terrain by using rocks as lake edging, as retaining walls and as locations for trees. We have used existing rock formations and manicured fairway edges to expose outcroppings. The result is a dramatic contrast between green turf and the exposed rock." Head professional Scott Bentley added: "Many new courses must start from scratch and plant new landscaping. We have the advantage of using groves and overgrown oak trees here 40 or 50 years. We will have a mature, established look at opening."

Amy Strong Castle, on the Register of Historic Landmarks and symbolic of mission and classic California craftsman design, will be preserved as the Mt. Woodson CC clubhouse.

Hanging Rock on 'magnificent' Va. spot

SALEM, Va. — "People come expecting just another public golf course, and they can't believe it," said the golf director at Hanging Rock Golf Club here.

K.C. Jones Jr. said Hanging Rock architect Russell Breeden "took an absolutely magnificent piece of land and designed a challenging, fun course with whatever you want."

Located in Roanoke County, near Salem, Hanging Rock is the first strictly public course to open in southwestern Virginia in more than 25 years.

Nugent and Western Golf Properties transform Bent Tree

DALLAS, Texas — In less than a year, Bent Tree Country Club underwent extensive renovation and was pronounced in excellent shape by competitors in the Texas Golf Association Mid-Amateur Championship Sept. 20-22.


No hole was untouched in the 800,000 project. Five greens were rebuilt, the other 13 resurfaced with Penncross bent. Fairways and greenside bunkers were reconfigured on every hole. New sand and tile eliminated a longtime drainage problem.

Six bunkers were added, bringing the total to 88. Six new regular tees and two forward tees were built. Mounding was added for separation of holes and to create a more rolling look. Fairway bunkers added in critical positions lightened driving areas.

Additional of a stream that runs the length of the right side of the long par four second hole changed a wide-open hole into one with two tight landing areas.

Back nine changes were more subtle, except for the completely rebuilt 17th hole. Originally a 211-yard par 3 on which the player couldn't see the green, it was shortened to 176 yards by moving the green forward and to the right, bringing a creek into play.

Bent Tree was designed by Desmond Muirhead in 1976.

Building without permits costs developer $15,000

ST. LOUIS — Stephen J. Apter, developer of an 18-hole golf course under construction in western St. Charles County, has been fined $15,000 for failing to obtain required permits.

Contractor Bill Marcrcander had started work on the golf course at a point farthest from frontage along Fortissell Road. A dam near the road was high enough to obscure construction work, but a building department deputy discovered the work while driving by.

Grading on the project had been nearly completed and a $850,000 underground irrigation system installed without permits or inspections.

When asked about sewage disposal in an area not served by a public sewer system, Marcrcander said two septic tanks served the site.

Willoughby's clubhouse garners national honors

STUART, Fla. — The clubhouse at Willoughby Golf Club here continues to garner accolades of professional in the field of design.

In addition to the recent "Best of Show" Pinzacadwe Award, the club house design has won the 1991 Aurora Award in the category of recreational facilities.

Designed by the architectural firm of CFY, Inc., based in Ft. Lauderdale, the design blends the graceful lines of a traditional style within the clubhouse while providing a dramatic statement for the exterior.

The 25,000-square-foot clubhouse includes spacious men's and women's locker rooms, golf shop, administrative offices, formal dining room, casual grill room and the Willoughby's, named for Capt. Hugh Willoughby.

Interior design was provided by Judy Corr of Correct Interiors of Sarasota, Fla., designer of Bent Tree, the clubhouse.

Howard County golfers get what they've desired

GLENWOOD, Md. — Cattail Creek Country Club, conceived late in 1988 by avid Howard County golfers and businessmen, held groundbreaking ceremonies July 28.

The more than 500 guests included 150 founding members who formed a non-profit organization and in 1989 acquired 320 acres straddling Route 97 in Glenwood.

Grading has begun for the 6,800-yard par 72 course. Development plans call for grading to be completed next May. Overseeding of the course and greens will begin in the spring of 1992. Opening is due early in 1993.

Willard Boyd, architect and designer of the Atlanta Country Club course, completed design and routing last April. The McEwen Group, of Sarasota, Fla., designed the clubhouse.
The European challenge

Expert says mutually accepted environmental standards needed

By Vern Putney

Ignorance of environmental issues exists in both the camps of golf course developers and environmentalists, according to a United Kingdom-based consultant specializing in "golf ecology."

David Stubbs, managing director of Environmental Golf Services, said: "Arguments have become polarized, but the truth is that golf courses can only benefit the environment properly if they are properly planned, developed and managed."

Stubbs said organizations like the Golf Course Wildlife Trust and the proposed European Golf Environment Commission are needed to solve the problem.

"Only when there are widely accepted standards, recognized both by leading environmental organizations and the golf industry, and applied to new projects, can we really expect to see positive results and an effective counter to the misinformed and blinkered opposition that currently afflicts golf projects," he said.

A member of the Species Survival Commission of the International Union for Conservation of Nature, Stubbs said environmental constraints must be identified and addressed at the appraisal stage of a project — before a large investment is committed.

"Go slowly," said the Los Gatos, Calif., U.S., golf course construction and two ready for launch. "Of 27 projects reported in the works, few got off the ground."

"Without the visitors, there is no money. "Europeans, he noted, have a different attitude toward sports than do Americans. Rather than pursue a recreation outlet such as golf zealously, they tend to enjoy multiple recreation activities."

Benz conceded. "Better golf courses are cheaper to build and manage because they are site-responsive and involve less planning hassle, while better conservation is achieved because the sites are properly managed," Stubbs said.

Environmental laws are particularly harsh in many countries. - Brad Benz

Planning authorities don't take kindly to those who profess to be golf course architects, haven't a clue about ecology-sensitive and minimal land manipulation and the classic values of golf course architectural design and, in the process, despoil terrain. A few such experiences have soured the market for "foreign" interests. Employing European developers frequently is more practical, he said. "In any price bidding, they usually have the edge," Benz conceded.

"Surprises await the American golf course architect that will supremely tax his resourcefulness. Europeans are very respectful of traditional ways of golf course design, construction, maintenance and facility management."

In America, for example, some golf courses use a million gallons of water a day for irrigation. Treasured water in Europe can be restricted to 150 cubic meters a day (40,000 gallons) for the same purpose. That quantity is barely sufficient to irrigate greens and tees only.

The balance of the golf course must rely on a cooperative and winning one. "Better golf courses are cheaper to build and manage because they are site-responsive and involve less planning hassle, while better conservation is achieved because the sites are properly managed," Benz said.

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October 1991 29
Dai-Ichi negotiations for Landmark Land real estate end with no sale

The sale of Landmark Land Co.'s real estate, which includes many well-known golf courses, to Japan's Dai-Ichi Real Estate Co. will reportedly not happen. Regulatory delays and a dwindling Japanese interest in U.S. real estate are responsible for quelling the deal, the Wall Street Journal reported.

The $739 million sale has been in the works since late December. But falling U.S. real estate values and Dai-Ichi's own financial problems reportedly caused the deal to fall through. "I don't think Landmark can survive without the deal," Kenneth Campbell, president of Audit Investments Inc., a real estate securities money management firm, told the financial newspaper.

Regulatory delays and dwindling Japanese interest in U.S. real estate are responsible for quelling the deal, the Wall Street Journal reported. The deal's collapse could lead to the federal takeover of Oak Tree Savings, the company-owned thrift that financed many of Landmark's purchases. The $967 million purchase price, including California's La Quinta Hotel Golf & Tennis Resort, Mission Hills Country Club and PGA West; Oak Tree Golf Club in Edmond, Okla.; and Kiawah Island in South Carolina.

Rees Jones' new Golden Horseshoe layout sits next to Dad's design

WILLIAMSBURG, Va. — A second championship course opened in mid-September at Golden Horseshoe Golf Club at Colonial Williamsburg. Designed by Rees Jones, the Green Course joins the Gold Course designed by Rees' father, Robert Trent Jones Sr., at Williamsburg Inn. The new par 72 course is cut from 250 acres of virgin timberland. Jones was free to take best advantage of the nature features, including vegetation and dramatically-rolling topography. Where the Gold Course plays across draws from ridge to ridge, the new course is a combination of ridge and valley holes. The quality of the course is in its framing. Because trees are so tall, fairways were widened to get sunlight in.
Mauck to paint positive club image

New NCA President Victor Mauck Jr.

By Peter Blair

Spreading the word that private clubs benefit society will be his most important task for the next year, according to Victor Mauck Jr., recently elected president of the National Club Association.

"Private clubs serve their communities well," Mauck said. "They do a lot of good things. There are some areas of club operations that should be reviewed. But private clubs are not bad things."

Private clubs have come in for a lot of abuse over the past few years. Charges of discrimination have bothered the industry since last summer's debacle at Shoal Creek. Private golf clubs have been targeted by environmental groups claiming golf courses pollute the environment with pesticides.

Lost amid those headlines, Mauck noted, are the private clubs that open their facilities free of charge for charity tournaments; the amount of money clubs pump into their local communities; and the many jobs the private club industry provides.

Mauck said he wouldn't be surprised. He is president of the St. David's Golf Club in Wayne, Pa. and past president of the Golf Association of Philadelphia, which he has served as director the past 18 years. He has been a NCA board member since 1983 and succeeds George Squibb as president of the 1,000-member association.

"The increasing number of right to privacy cases involving private clubs in the state and federal courts has been the biggest change," during his tenure on the NCA board, Mauck said. "That continues to be the key issue. Some of the rulings have presented real challenges that the industry's had to deal with."

"The continuing environmental problems with wetlands and underground storage tanks will be the major issues. It will be confusing until the federal government draws up guidelines that everyone can work with. Unfortunately, we still have 50 states interpreting environmental laws in 50 different ways." Mauck received a bachelor's degree from Princeton University and attended the Wharton School of Business at the University of Pennsylvania. He was an administrator with John Wood Co., a metal fabrication firm, for 20 years before opening a radio station and box manufacturing company of his own.

He is currently president of the Montgomery Golf Foundation, a fund-raising agency for Morristown, Pa.'s Montgomery Hospital.

Mauck said he will be "very active" in setting the NCA's agenda and coordinating the association's efforts with other groups, like the Golf Course Superintendents Association of America and United States Golf Association.

"Victor is very active in the golf industry, not to mention being a hardnosed, difficult, club manager's job is to influence the ethical decisions made by those around him."

"A manager's goal should be to be a source of influence in ethics," Pastin said.

"How does a manager do that and run a successful business? By following several rules which Pastin has given the acronym ACT TRAC. The letters stand for Assumption, Challenge, Turnabout, Truth, Risk and Continuation.

"Continued on page 33"
Seminar focuses on running profitable operation

ORLANDO, Fla. — The National Golf Course Owners Association's seminar, "Building a Successful & Profitable Golf Operation," will give public golf course owners a comprehensive look at golf operations from the inside out, Oct. 7-8.

Officials from Chase Golf Management Group, Hillier, Wanless & Cherry, Pannell Kerr Forster, and Textron will provide information on critical issues and the latest strategies and techniques in golf management. Seminar site is Hyatt Orlando Hotel and Kissimmee Bay Country Club.

The two-day program is designed to help golf course owners, builders and managers operate their clubs profitably. It will combine the expertise of leading golf authorities with an in-depth tour of a golf facility.

The format consists of a full day of presentations, including a profile of three NGCOA members who will discuss golf course operations and construction from an owner's perspective. A golf workshop and tour will be held on the second day for attendees to get a hands-on look at a golf facility. Attendees will wind down with a golf outing at one of Florida's premier golf communities, Kissimmee Bay Country Club.

Topics will include management/operational systems including the design of departmental budgets, cash management, and operations control; increasing membership development through properly structuring membership programs and advertising strategies; financing and investment options - how to borrow money and mortgage or sell your property; avoiding legal liability in the areas of liquor liability, workers' compensation, employee sexual discrimination, and insurance liability; and understanding environmental issues focused on environmental protection, water conservation, and underground storage tank removal.

James Applegate, president of Gary Player Design Group, will discuss the intricacies of golf course renovation and redesign. More information is available from the NGCOA office at 800-453-4262.

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MANAGEMENT

Tax watchdog group formed

The Club Expenditure Council has been organized as a subsidiary of Property Tax Representatives, Inc., an ad valorem tax appraisal and consulting concern in Kansas City.

The CEC was developed to meet the club industry's need for current, accurate data relating to ad valorem tax and assessment issues.

CEC National Coordinator Charles Sloan said: "We have worked with a number of clubs over the years and learned first-hand what a unique industry this is. The managers and members whose job it is to deal with their club's assessment and resulting property tax need a backup they can count on in managing this significant expense.

"Whether they feel their club is over-valued or under-valued, it's critical that they stay informed. The CEC will function as their in-house specialist to help keep their club's real estate and personal property tax expense at its lowest possible level."

The CEC monitors the ad valorem tax scene nationwide and accumulates sales operating data specific to the club industry. For more information contact Club Expenditure Council, 2 West 39th St., Suite 220, Kansas City, Mo. 64111 or call 800-950-CLUB.

NGF hosts W. Va. manager institute

WHEELING, W. Va. — The National Golf Foundation and the Oglebay Department of Continuing Education will host the ninth annual National Institute of Golf Management Jan. 12-17 at Oglebay Park Resort and Conference Center.

Clubhouse and golf shop merchandising; course maintenance and security; food, beverage and range operations; personnel, customer and press relations; publicity and promotions; golf car economics; rules management and tournament play will be covered during the intensive five-day program.

Students must attend two years to complete the program.

The faculty includes authorities from the USGA, PGA of America, Golf Course Superintendents Association of America, American Society of Golf Course Architects and the NGF, as well as course owners and operators, developers and manufacturers.

For further information or registration materials, contact the National Institute of Golf Management, Wheeling Park Commission, Oglebay, Wheeling, W. Va. 26003; the Department of Continuing Education at Oglebay at 800-624-6988, ext. 278, or the National Golf Foundation at 1150 S. U. S. Highway One, Jupiter, Fla. 33477. 800-733-6006.
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Washington, D.C. — Chardonnay Club, a 36-hole championship golf facility in the Napa Valley wine country of California, will be managed by Marriott Golf under a recently signed contract with Cooke & Andrews Investments Inc., the U.S. development unit of Japan's Systems and Engineering Corp. Other facilities in the agreement are under development in Virginia and Georgia.

Roger Billings has been named director of operations at Chardonnay Club.

Marriott Golf earlier this year signed a long-term agreement with Golden Bear International to manage 15 public golf facilities to be developed over the next several years.

The National Golf Foundation has introduced the first three in a series of specialized research publications called Market Reports.

Trends in the Golf Industry, Golf Travel, and Stand-Alone Golf Ranges in the U.S. offer insights into a specific aspect or segment of the U.S. golf industry. Collectively, the reports provide a comprehensive overview of current trends in both golf supply and golf demand. They range from 14 to 20 pages in length.

"Not only will these smaller, single-subject reports be more useful and affordable to many in the golf industry, but they allow us to take a more focused approach in unveiling the wealth of data collected over the past year," said Michael Russell, NGF's senior research director.

Trends in the Golf Industry describes national trends in golf's growth from 1986 to 1990 in terms of the number of golfers, rounds played, and golf courses supply and development.

Golf Travel combines material from several NGF surveys regarding the golf travel habits of American golfers. Traveling golfers are profiled by age group, income and gender. Also discussed is how often they travel, leading travel destinations, and the estimated size of the golf travel market.

Stand-Alone Golf Ranges in the U.S. offers a unique look at the status of range operation and management. It profiles recently surveyed off-course ranges and includes information on tee stations, lighting, practice areas, seasonality, pricing and more.

Three other Market Reports are soon to be added to the series and include:

- America's Attitudes Toward Golf in Their Communities — an examination of how Americans feel about the impact of golf courses on their communities.
- Women in Golf — a complete demographic profile of today's 6.5 million female golfers.
- The Consumer's Cost of Golf — an analysis of golf expenditures and purchases such as green fees, membership fees and golf apparel.

To order, call NGF's Membership Services Department at 800-735-6006.

Dallas — Club Corporation of America, which claims to be the world's largest owner and operator of private city and country clubs, has formed ClubCorp Consulting Group.

The division offers consulting services for clubs and resort development, marketing and operations.

Services cover all areas of development and operations, including market analysis and feasibility studies, design/construction/operations start-up and operations management.

James L. Faubion, president of ClubCorp Consulting, said: "CCA saw a need to provide flexible access to its asset management expertise. Now club or resort owners and management can benefit from CCA's extensive resources targeted specifically at their project's needs."

CCA operates more than 200 private city, country and athletic clubs.

Lana'i City, Hawaii — Charles Ortega has been named director of golf for Lana'i Resorts. He will oversee operations and marketing functions for The Experience at Kiokele and The Challenge of Manele (to open in 1993), two championship golf courses on Hawaii's private island of Lana'i.

Before promotion to general manager and director of golf at Kiahuna Golf Club in Kauai, Ortega was the head golf professional and director of marketing there.

Marc Orlowski is the new head professional at Skylinks Golf Course, Long Beach, Calif.

Charles Ortega was voted "Best New Golf Course" by Fortune Magazine, The Experience was designed by Greg Norman and built by course architect Ted Robinson.

Lana'i names golf director

Club Corp. opens consulting arm

Golf trends analyzed in new NGF publications

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Running clubs with an ethical eye on the bottom line

Continued from page 31

Candor.

Assumption: In ethics, the manager must get below the surface to discover the real issue. In the business arena, for instance, a club manager who assumes his competition is simply other clubs will soon find himself unemployed. Any other form of recreational and social activities are really competitors. The manager must realize that to survive.

The same is true when a community attacks a club's membership policies. While the assumption is that the community is crying for ethnic balance, the real issue may be jealousy of the privileges private club members enjoy.

The assumption is what you have to get in order to do some new thinking,” Pastin said.

Challenge: The only constant in any business is change. Successful managers challenge assumptions about what people want, anticipate changes in their desires by getting ahead of market research and then act accordingly.

Turnabout: Turnabout involves fairness. That is, discovering a middle ground between what is fair in the manager's mind and what is fair in the employee's, customer's or member's mind. A manager can't do that if he has only concerned about what he thinks.

How can these first three ethical tools help a manager better run a business? A good example is the success of the Nordstrom's department store chain, the most highly regarded retailer in the country in consumer polls, Pastin explained.

The Nordstrom's challenged that assumption, making it convenient for customers to return items without sales receipts or issuing credit slips instead of cash. The turnabout was the trust Nordstrom's placed in its customers and the convenience the store offered really mattered to shoppers. That explains why Nordstrom's can charge more for the same products than its competitors, but is still one of the most successful retailers in the country, Pastin said.

"That is perceived as an ethical world where business and people are willing to pay a lot for it," Pastin explained.

Truth: The president of Scandinavian Air Lines said that customers base their decisions whether to continue buying from a company on brief, face-to-face moments of truth with company employees. A manager can be blindsided by a problem from an employee or a staff member that could have solved if told about early enough,” Pastin asked. "Every time that happens, it's a failure of the manager to do the right thing, to inform the manager early enough that a problem was out there.

"People will tell managers what they need to know if they are encouraged to do so, rather than being punished,” Pastin said.

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MANCHESTER, Conn. — The Travelers PGA Edge customized insurance program to private, semi-private and public golf courses and country clubs has added protection against environmental damage caused by pesticide application.

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**Briefs**

**Europe proving a bonanza for some**

*By Bob Spicawak*

American companies involved with golf see a bright future in the European community. With varying amounts of experience and market penetration overseas, executives of golf-oriented companies, or subsidiaries, reached consensus on two points: France and Germany are the hottest markets for golf right now, and the "boom" in European golf may be over.

On the latter point, Charlie Barebo, vice president of sales at Otterbine-Barebo, doesn't agree. As a manufacturer of water aeration products, he sees the market still expanding. Having been in the Euromarket for four years, Barebo said his company "has planted the seeds" to what he sees as an eventual crop.

His optimism makes sense. Curt Kimbeck, director of international sales at Jacobsen, cited growing signs of a world recession. Among causes of a golf slowdown is the "green" or ecological movement. Since Otterbine aerators reclaim water, that segment of the market seems to be in concert with ecologists' worries over excess water consumption and pollutant transportation.

Kimbeck said his company's primary strength is in golf course maintenance. Jacobsen, he said, introduced the first diesel powered triplex greens mower several years ago. While it is still resisted in the United States, he noted that it was a hit overseas because of the lower price of diesel versus gasoline and more stringent regulations placed on gasoline storage in Europe than in America.

Knute Jacobsen, founder of the company, contacted "someone in Switzerland" in the 1950s, and the company has had a firm foothold since, with about 30 percent of sales in Europe and Great Britain.

"The market (in Europe) is so huge that, if you manufacture a good product, the potential is always there," Kimbeck said. It depends on the product. While optimistic, American turf seed distributors are frustrated by regulations on their products that they feel constitute trade barriers.

Mike Robinson of Seed Research of Oregon in Corvallis, Ore., said the licensing procedures for U.S. seeds "to a certain degree is a trade barrier. The Dutch have dominated the market for years."

Said Bill Rose, president of Oregon's Tee-2-Green, marketers of the Penn variety bentgrasses, "We've been working really hard the last four years to crack that market."

Continued on page 38

**Infrared photos help find problems**

*DENVER, Colo. — The Innova Corp., formerly New Golf Concepts, Inc., has added infrared photography to its list of products for the golf and environmental industries.*

John Seid, an expert in the remote sensing technology who brought the use of infrared photography from agriculture to the golf course industry, has been named manager of infrared services.

This photography, applied to golf courses and other agricultural tracts, records changes in the photosynthesis process, an early indicator of stress or disease in plants and turf. It also detects breaks in irrigation systems, soil changes and drainage problems.

Full color enlargements, together with aerial slides and complete analysis, give superintendents concrete proof of problems that may not be visible to the naked eye.

Innova, national distributor of Isolite soil amendments, plans to use infrared photography to graphically illustrate the effects of Isolite in the soil. Isolite, a porous ceramic soil conditioner, is said to reduce water consumption up to 50 percent, reduce compaction in soils, and improve absorption of nutrients.

Through the use of infrared photography, it will be possible for courses to use Isolite more efficiently, officials say.

For more information on infrared services Seid may be contacted at (800) 533-7165.

Innova headquarters can be reached by writing 8670 Wolff Court, Suite 220, Westminster, Colo. 80030 or calling 303-428-4383.

Continued on page 38
Many firms cashing in on lucrative European market

Continued from page 37

ket," Rose called the Euromarket "extremely restrictive," but sees a good future if his product continues to get on the approved list. To make the list, each country being wooed requires a fee ranging from $500 to $3,000. Every few years the license is subject to renewal.

Robinson noted that while Holland may dominate the market, there are countries, such as the Scandinavian, that do not wish to be dominated by another nation. They may ease the marketing process.

Seed Research has been involved in the Euromarket for eight years. "While the boom has peaked," Robinson said, "the popularity of golf in Europe is just taking off, resort and resident courses alike." His company has test plots of its SR 10/20 and SR 10/19 bentgrasses in a half-dozen countries, said: "The European market will continue to grow. We're going to see a settling down and tapering off. The boom growth has settled, and may have already peaked."

Garske feels Sweden and Germany hold the greatest potential for Par Aide. The maker of cups, flagsticks and washers, among other products, has worked through dealers since entering the Euromarket in the 1960s. Garske feels his products get a boost through recognition by Europeans playing golf in this country. "We've pleased with what we've seen. We've done quite well against local manufacturers," Garske said.

Tim Young is director of sales and marketing for Rainbird International. Rainbird has been in Europe for two decades. He said, "France is the hottest in a cooling market." Young's focus appears to be on Berlin, an area he sees with the potential of burgeoning golf. Now that East and West are one, the region, and what once was "no man's land," offer land and populace to expand golf. Germany, he said, has the best chance to jump-start itself forward. Rainbird's regional managers and staffs are natives to the countries in which they work — a Spaniard in Spain, a German in Germany and so on. Young feels this produces not only market savvy personnel, but people who are broad-based and culturally and linguistically sensitive to their markets.

O. M. Scott of Marysville, Ohio, markets about 20 pro-turf fertilizers and a commercial spreader line in Europe. International business manager Kerbin Riley found France and Germany the greatest potential golf markets. Pursuing business in the 13 West European countries, he said company involvement in the former Eastern Bloc countries is "not something we are rushing." Riley's sense of the European market is that it is still growing rapidly but, put in perspective, should not be overstated. There were many years, he said, when nothing happened. He acknowledges a steady growth in business for his company. He also is "very optimistic" about the coming former East German market. "We are going to continue to place a focus there, looking for good things in the future."

Owen Towne of Ciba-Geigy said the Europeans, particularly the French, do not pursue high maintenance turf chemicals. His company, reputedly the world's largest in agricultural chemicals, has had some frustration in this regard.

He cited France as a country heavily into ornamental plantings, without a lot of emphasis on turf. He stated: "Europe is going through a growth phase as we did years ago. We're trying to convince them to get into the turf market, so far without much success."

Definite optimism for the future of the European golf market was tempered somewhat by the two seed companies. They see the subsidizing of Dutch growers and restrictive "approved lists" as a hindrance to doing business.

And while France and Germany may be the current darlings in the expanding golf arena, the Mediterranean countries, including Turkey, are not being overlooked by American business.

And, the uncoalesated "communist" nations in Eastern Europe, perhaps after drifting into a capitalist economy, present another market opportunity.

A trade show in Warsaw or Belgrade? In goldolm, anything is possible.

Biosys, Archer Daniels reach mfg. agreement

PALO ALTO, Calif. — Biosys, a manufacturer of environmentally safe biological pesticides, has reached manufacturing agreement with Archer Daniels Midland Co.'s (ADM) biochem products division. The companies will mass-produce nematodes, insect-killing biological pesticides, at ADM's newly constructed biochemical facilities in Decatur, Ill.

ADM will provide facilities and operation personnel, Biosys on-site technical, staffing and expertise in nematode production technology.

Nematodes, microscopic organisms that kill a host of insect pests, are the active component in Biosys' family of biological insecticide products. Harmless to humans, plants and animals, they leave no harmful residue in soil or groundwater, and as such are exempt from EPA registration requirements.

ADM is an $8-billion producer of food and feed ingredients.

MAXI

Continued from page 37

ET concept, database computing and entering, and advanced scheduling, technical writing and sensor functions. Level 3 covers flow management table structure. Detailed implementation of databases, such as acquisition and condition of flow zone and branch zone data, is included.

The Instructor Level program is based upon attaining a Level 3 certification and the submission of applicant's teaching materials, training aids and other documentation of MAXI certification teaching skills.

For more information, contact Cozz Regale at Rain Bird Golf Sales, Inc., 145 North Grand Ave., Glendora, Calif. 91740 or call 818-852-7353.

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**SUPPLIER BUSINESS**
Greenscape adds pump and valve

COFFEE, Tex. — Greenscape Pump Services, Inc., has introduced the Float-N-Foot Valve and Float-N-Pump.

The valve is designed to solve the problem lift centrifugal pump stations frequently encounter. Silt and debris cause clogged inlets, pump destruction, irrigation equipment failure and turf damage. The valve assembly positions the foot valve two to three feet under the surface of the water, rather than on the bottom of the water source where silt and debris collect.

The hose is attached to the existing suction piping via a built-in flange, which allows the foot valve to hang directly under the special fiberglass-encased float. The low profile black float adjusts with the water level and keeps the foot valve in the cleanest strata of water while maintaining suction prime.

The pump provides an unobtrusive, cost-effective method for water transfer, fountains, waterfalls and irrigation applications. It can be designed with either a submersible turbine or submersible trash-style pump, and comes with a U.L. listed control panel.

The combination of a specially designed SBR hose connected to a fiberglass-encased float structure allows the pump intake to take in water two to four feet below the surface of the water and adjust as the water level varies.

Contact Greenscape Pump Services, Inc. at 214-393-0346.

CIRCLE #303

Shrub adapter offers variety

Santee, Calif. — The 6200 series Olson shrub adapter can be used to convert from standard sprinklers to micro-spray.

The 1/2-inch female pipe threads on the inlet, the adapter is available in two outlet sizes. The 6201 accepts all 10-32 thread nozzles, including the Olson O Jet and Mini-Sprinkler. The 6202 accepts 1/4-28 thread nozzles such as the Olson Hydro-jet.

The shrub adapter has varied applications on above-ground risers in ground covers, shrub areas, planters and flower beds.

Contact Olson Irrigation at 619-562-3100.

CIRCLE #304

High capacity nozzle available

SAN MARCOS, Calif. — Hunter’s gear-driven Model 1-40 features a new high capacity nozzle.

The #45 nozzle extends the radius out to 74 feet, and increases the discharge rate to 27.5 gallons per minute.

The durable pop-up sprinkler has a safety-cushioned rubber cover and heavy-duty stainless steel riser.

Contact Hunter Industries at 619-501-7034.

CIRCLE #305

FRESNO, Calif. — COPS Universal and the Model 20321 are new products from the water management specialists Buckner Inc.

COPS Universal (computer oriented programming system-universal radio irrigation control) permits operating and monitoring field controllers from a central computer using a radio interface. It is suited for retro-fitting existing parks, median strips, school grounds and golf courses.

The radio interface uses standard 110-volt, AC power. It also can be powered by a DC source, such as a cigarette lighter, and used with a laptop computer to operate field units.

The Model 20321, 1-inch, contamination-resistant, 2-way, electric, plastic valve is especially suited to systems that have fine particles that may clog valves with filters or screens.

The valve has internal manual bleed, flow control and an innovative diaphragm design to minimize maintenance.

For more information on COPS Universal or any other Buckner product contact Buckner at 4381 Brawley Ave., Fresno, Calif. 93722

CIRCLE #301

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For over twenty years, Fore-Par accessories have been leading the way on golf courses around the world.

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CIRCLE #133
New controller designed for reclaimed water

CULVER CITY, Calif. — The WaterSaver Reclaimer, manufactured by EMC/Hirsch, Inc., is an irrigation controller designed specifically for effluent water usage. The Reclaimer features a specific faceplate and clear warning labels which indicate effluent water usage. Wind, soil, rain and flow sensors are features. The wind sensor prevents unwanted and wasted wind-blown irrigation controller designed specifically for effluent water usage.

The Reclaimer has a purple colored inceptacle and clear warning labels which indicate effluent water usage. The Reclaimer retains all irrigation program memory, even during power failures, and contains built-in short circuit and surge protection. EMC/Hirsch, Inc. is located at 1811 Major St., Culver City, Calif. 90230.

Circle #302

"...Watertronics saved us money and time."

"On behalf of the West Bend Country Club, a special thank you is in order. Particularly for the hard work Watertronics did investigating our requirements and designing a Horizontal Centrifugal (HC) Pumping Station suitable for our needs. The thorough preparation by Watertronics saved us money and time."

"The synchronization of the pumps, the smooth cycling of the system and the absence of expensive line breaks have made my job easier as well as making our overall operation more economical.

"The correct and efficient way of using irrigation for recreational purposes was a great concern not only to us but to environmentalists as well. The design, workmanship and care with which Watertronics carried out the installation of our Horizontal Centrifugal Pumping Station proved to be a very acceptable solution for everyone."

"Again, thank you for all you have done for West Bend Country Club."

Sincerely,

Bruce Worzella, CGCS
West Bend Country Club

Call today for your free HC Brochure.

1-800-356-6686
(In Wisconsin, call 414-782-6688)

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Borer produces trenchless service

PELLA, Iowa — The Navigator, a new sophisticated, directional, wet-boring system designed to produce clean, "trenchless" underground service installations and eliminate site damage and restoration costs, is available from Vermeer Manufacturing Co.

The Navigator can bore straight ahead or in any direction to within inches of its underground target destination. The drill head can be "directed" along winding streets or walkways, around buildings, under streams and rivers, laterally or vertically.

A locator digitally "reads" the location of the drilling action (down to 16 feet) by means of a long-life (150-hour), battery-powered directional probe which transmits from the drill head to the locator. An optional remote locator allows the operator to see and hear everything the locator sees and hears.

To lubricate and create the proper environment for control and speed at the point of attack, fluids are fed through the network of connecting rods to the drill head.

A strike-alert system signals, by sound alarm, "hot" conditions, and an easy-to-reach priority flow control knob regulates rotation and thrust speed.

Contact Jarrett Cowden, Vermeer Manufacturing Co., P.O. Box 290, Pella, Iowa 50219 or call 515-628-3141.

Circle #306

Otterbine offers new aerators

EMMAUS, Pa. — Otterbine Barebo Inc., has introduced three self-contained aeration systems.

Triton, a subsurface aerator, helps keep waterways clear of foul odors, aquatic weeds and algae, while staying virtually unnoticed. It's designed to work in architectural and conservative settings where no enhanced water features are desired.

The Triton features a long-lasting electric motor specifically designed for aeration.

The Sunburst floating surface spray area offers such new features as interchangeable spray patterns, increased pumping rates, computer-aided design, stainless steel and high-tech engineering and thermoplastics construction.

The High Volume floating aerator also has interchangeable spray patterns and increased pumping rates, and like the Sunburst features a heavy-duty, low-speed Franklin motor with a solid stainless steel housing.

Contact Otterbine Barebo Inc., R.D. 2, P.O. Box 217, Emmaus, Pa. 18049 or call 215-965-6018.

Circle #307

Valve box allows for shallow burial

SHEBOYGAN, Wis. — A new 6" flared valve box, designed for shallow burying of remote irrigation control valves, is available from Ametek.

Advantages of the new flared box include rugged, proven Superflexon construction, 6" square/inch, more working room at 6 1/2" depth, no slots to cut and snug nesting for convenient shipping and storage. Standard valve box lids are accepted.

Contact Ametek, Plymouth Products Division, 502 Indiana Ave., Sheboygan, Wis. 53081 or call 414-437-9435.

Circle #308

CIRCLE #134
Hunter Industries' publications deal with saving water

Water perhaps is Topic A among golf course superintendents. Two recent publications by Hunter Industries, San Marcos, Calif., treat that valued commodity in detail.

Hunter Industries has released a 48-page equipment catalog dealing with sprinklers designed for golf courses, sports fields, public areas, residential and commercial applications. Performance charts with water distribution data are supplied for each Hunter sprinkler, along with information on installation and adjustment, replacement charts, bidding specifications and matched precipitation rates.

"The Case For Reclaimed Water" is an informative brochure which discusses the use of reclaimed water in landscape irrigation systems. The brochure notes: "Few issues are as important and critical as the availability of water in many of the fastest-growing areas of the nation. In states such as California, Arizona and Florida, use of reclaimed water increases daily.

"Reclaimed water treated to the highest degree, called 'tertiary treatment,' may be used for virtually any purpose except drinking. Reclaimed water frequently is used to irrigate golf courses, parks, schoolyards, athletic fields, freeway landscaping, residential common areas and greenbelts, and all types of agriculture."

In parts of Arizona, permits will not be issued to build golf courses unless project plans specify reclaimed water for irrigation. In Irvine, Calif., residents have no choice. The water district delivers either potable or reclaimed water based on use.

"In Cape Coral, Fla., where water is pumped from wells, and salt water has depleted groundwater basins, there now is a dual-piping system which will carry reclaimed water to residences for landscape irrigation."

"Public acceptance of reclaimed water utilization has come a long way."

"In 1980, a public opinion poll suggested that few backed widespread use of reclaimed water. Now, with increasing concern over water shortages and greater confidence in wastewater treatment processes, 90 percent of those polled recently had no objections to use of this product."

"Reclaimed water is helping to conserve our most precious natural resource." Flexible irrigation is a growing industry.

Hunter Industries has also released a new illustrated poster depicting historical developments in irrigation.

The four-color poster documents milestones in irrigation history, including water delivery devices and systems for agriculture, landscaping and other public uses.


ew

New book traces irrigation's history

ARLINGTON, Va.— "History of Irrigation," reportedly the first fully-illustrated, historical analysis of irrigation in the United States, is being produced by Windsor Publications, Inc., in cooperation with the Irrigation Association (IA).

A historian Bob Morgan's volume chronicles the role of irrigation and water use in America's agricultural and landscape development, and reveals interesting facts and photographs from this diverse industry. Focus not only is on historical events, but on the growth and contribution made by the industry businesses and organizations.

The "History of Irrigation" is fascinating and popular reading of an age-old practice that touches many lives.

Jacobsen releases equipment guide

RACINE, Wis. — Jacobsen has released its new equipment directory, containing descriptions and specifications on the full line of Jacobsen professional products.

The 64-page catalog includes information on the company's new utility trucks, and the Aero King line of aerators. In addition, there is information on Turfcat outfront riding mowers, the Greens King IV and LF-100 greens and fairway mowers.

The catalog may be obtained by writing the company at 1721 Packard Ave., Racine, Wis., 53403.

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Book features Hawaii’s best

SAN FRANCISCO—"Golf Courses of Hawaii," by Tom Ramsey, explores virtually every great course on Hawaii’s six major islands. Forty layouts are featured, with course maps, descriptions and full-color photography by John Knight.

The book, 208 pages with 300 full-color photographs, highlights the 17th hole at Mauna Lani, surrounded by lava beds; the Jack Nicklaus-designed Kiele course in Maui’s new Ko Olina with its gently rolling hills, valleys and waterfalls; the Waikane, home of the Hawaiian Opera; Kahalui on Molokai, one of golf’s best-kept secrets; and Mauna Kea, where golfers must carry 210 yards of windy Pacific space to set up par or birdie on the third hole.

The guide touches on the history, design features and visual splendors of each course, and includes a comprehensive course directory with the addresses of all Hawaii courses, their sizes and par ratings.

Robert Trent Jones Jr. wrote the foreword. Price is $39.95.

Contact Collins Publishers, 50 Osgood Place, San Francisco, Calif. 94110 or call 415-788-4111.

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TOM RAMSEY
Photography by JOHN KNIGHT
Foreword by ROBERT TRENT JONES, JR.

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Convenient directory lists Calif. courses

MERCED, Calif. — Kirk’s Directory of California Golf, easily stored in a briefcase or golf bag, lists more than 600 of California’s finest golf courses.

The listing includes such course information as green fees, yardage, difficulty ratings, phone numbers, address, kind of facility (i.e. resort, public, private, military, semi-public and private reciprocal play).

On the accompanying page is a four-color highway map with locating borders. This provides the traveling golfer with a quick look at the golf courses located around his or her destination.

California is divided into 14 color-coded sections, referencing back into a central index.

Recommended lodging facilities are listed under certain courses, along with rates.

Kirk M. Mills is the author, Mills and Associates the publisher. Price is $11.95.

Contact Mills & Associates, 221 E. 2nd St., Merced, Calif. 95340 or call 209-722-3306.

NGF catalog lists 300 publications

JUPITER, Fla. — The National Golf Foundation’s fall-winter catalog includes nearly 300 publications on virtually every aspect of the golf business.

New is a section devoted to golf and the environment. Other featured topics include facility development and operations, golf market research and rules and instruction.

For a free copy, write National Golf Foundation at 1150 South U. S. Hwy. One, Jupiter, Fla. 33477 or call 800-733-6006.

Video documents golf's contribution

LAWRENCE, Kan.—"Links with Nature: Golf Courses and the Environment," a 14-minute video produced by the Golf Course Superintendents Association of America, documents the positive ecological impacts of golf courses.

"It will help the golf industry respond to misconceptions about golf courses and how they're managed," according to John M. Schilling, GCSAA executive director.

"Links With Nature" highlights benefits often overlooked and cites independent research findings that allay public concerns. The video discusses how golf courses can provide direct benefits for soil, water, air and wildlife. Outlined is the role golf course superintendents play in managing property responsibly.

Copies of GCSAA’s new Greentips fact sheet series also may be ordered with the tape.

The videotape is $20 for GCSAA members, $30 for non-members. To order call 913-832-4480.
Golf Course Marketplace

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CALENDAR

October
7 — Allied Association Meeting at St. Leo CC and Bend CC. Contact Georgia GCSA at 404-769-4076.
7 — National Golf Course Owners Association seminar on "Building a successful and profitable golf operation" in Orlando, Fl. Contact Wendy at 800-933-4262.
7 — Golf Course Europe in Wiesbaden, Germany. Contact Ellen McGillavry at (03465) 78777.
8 — 5th Annual West Texas Golf Conference Golf Tournament and Sponsors Ban-B-Q at Western Texas College. Contact George Fugitt at 806-792-7482.
8-10 — Kentucky Turfgrass Conference and Field Day in Louisville. Contact Dwight Berkley at 606-622-2228.
9-10 — GCSA Seminar on Protection of Water Resources in Toronto.*
12 — Pennsylvania Golf Course Owners statewide dinner meeting at State College.
19-24 — American Society of Landscape Architects in Kansas City. Contact Steven Bauer at 816-672-1201.
24-27 — GCSAA Seminar on Disease Identification & Control in Little Rock, Ark.*
24-26 — Summit 91 Women in Golf in Daytona Beach, Florida. Contact LPGA at 940-254-8800.
28-29 — GCSAA Seminar on Golf Course Restoration, Renovation & Construction Projects in South Yarmouth, Mass.*
31-Nov. 2 — GCSAA Seminar on Basic Turfgrass Botany & Physiology in Aurora, Colo.*

November
2-5 — American Seed Trade Assn. Lawn & Farm Seed Conference in Kansas City. Contact 202-223-4000.
5-6 — Georgia GCSA Annual Meeting at Jekyll Island Club Resort. Contact Georgia GCSA at 404-789-4076.
4-5 — GCSA Seminar on Environmental Considerations in Golf Course Management in St. Louis.*
5 — GCSA Seminar on Personnel Functions of the Golf Course Superintendent in Rochester, N.Y.*
5-6 — Indiana State Lawn Care Association Conference and Show in Indianapolis. Contact ISLCA at 317-575-9010.
5-8 — New York State Turfgrass Association Turf and Grounds Exposition in Rochester, N.Y. Contact NYSATA at 607-673-7474.
7 — GCSA Seminar on Maximizing Job Satisfaction in East Lansing, Mich.
7-10 — Golf World 91 in Dusseldorf, Germany. Contact Monika Waraczynskia at (0211) 4560-543.

Continued on page 44
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December
2-6th Home Turf at Michigan State University in East Lansing, Contact Dr. Frank Rood at 517-353-0860.
3-5th Ohio Turfgrass Foundation Annual Show in Cincinnati. Contact 614-292-2601.
3-4th Pacific Coast Turf & Landscape Conference & Trade Show in Seattle. Contact show producers at 206-728-5004.
21-22nd Golf Course Owners General meeting membership in Monroeville.
26th Golf Course Superintendents Association of New Hampshire Annual Meeting in Concord, N.H.

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ON THE GREEN

"I'm no longer crowning tees because every time I crown a tee, from year to year I see half of it being used and half of it not being used. The part that would put the ball below the player's feet is not being used."

Connor said the laser is effective because "I don't have to jockey dirt back and forth."

"In the old days, when a tee area was short of dirt, I'd have to shut the tractor down and bring in dirt I'd want to hold grade. What I do now is just hit a button, raise the mast another one-tenth of a foot and it drops the grade. So I can use what dirt I've got to achieve the perfect surface. And if the hole tee ends up being a couple tenths lower or higher, it is of little consequence."

DRAMATIC EFFECTS
Connor fondly recalls the day a year ago that he unveiled a point for the first time, which he said he "plagiarized" for use on golf courses. He was renovating Palma Ceia golf course in Tampa, and was driving onto the site one day when he went by the 17th tee, which was at eye height. He did a double-take of this tee. It was the most beautiful thing I'd ever seen. I could look at it at eye height and it looked like it was sliced with a diamond cutter. It was perfect. I said, 'Wow! What did that?' I had been around golf course construction all my life and never seen a tee look that good."

He checked with the course builder, Sunbelt Services of South Florida, "found out where that machine was and a week later I owned one."

Connor said one reason the city of Nashville was persuaded to redo the tees was "This was where they were going to spend only 20 percent of their money but they'd get 80 percent of the praise." He told officials: "People see a tremendous improvement in the look of the tee, and that's what's going to make it politically palatable for you to spend the money and take the courses out of play for a season. When golfers come back they will dramatically see a difference, whereas if you are just doing greens, the greens only looked stressed here a couple of months a year and the improvement in turf environment is not obvious until several seasons have elapsed."

"The greens had the course been the artist's tapestry. It's hard to look at a green and say there's a mistake unless it's really blatant. But you could always look at a tee and notice a flaw immediately."

Connor looks to a future of designing and renovating golf courses using the computer models, laser equipment, and whatever other marvels modern high-technology brings. "The thing I'm going for is the reason I've managed to get jobs is that by combining these technologies, we have made significant inroads in preserving famous old golf courses like Pebble Beach and Seminole. The combination is hard to beat," he said.

"It took me about six months to put the lasers and the computer models together..." Connor said the laser is effective because "I don't have to jockey dirt back and forth.

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Laser technology makes tee grading job easier

**Computer model man Ed Connor does it again**

*By Mark Leslie*

The man who brought you the computer terrain model to preserve historic golf courses has introduced another technology to the world of golf course construction. Move over, stakes and grade lines. Come on down, laser emitters, gyroscopes and radio-controlled drag scrapers.

"Golf course managers are coming out of the woodwork to look at it," said Edward Connor of the laser equipment he has now used to grade tees at Pebble Beach Golf Links in California and Seminole Golf Club in Florida.

Speaking of his current work at two Nashville, Tenn., municipal courses, Connor said: "We've got 120,000 square feet of tee space here. We lasered it and laid a two-inch layer of sand over the top and lasered it again in three days.

"It used to take me at least a month for that kind of work."

Connor predicted the industry would see the laser gear used as a standard of construction in the future. "It's just too good for one guy to have as a secret for very long... It's one of the best tools I've ever seen for new construction or renovation," he said.

As important as speed is to the equation of tee construction, precision is even more crucial, according to Connor.

"The big advantage is that it allows you to do what the agricultural people have been doing for years when they flood-irrigate large fields. It allows you to put a very flat grade with uniformity on a surface like a tee," he said. "Once you get over a three-percent slope the people standing on the tee can feel it. But to grade less than three percent has always been a problem. You run into the danger of pockets. And when you get down to one to two percent, the threat of pockets becomes significant. Naturally, you don't want anything that holds water or presents an uneven surface."

For years architects have often opted to build a crown onto the tee and "live with some unevenness rather than risk getting a pocket or an uneven settlement spot," Connor said.

"We've gone a long way in eliminating that problem. We can grade tees very confidently at one percent or even half a percent. And it's so fast that one man can do what used to take a crew of five people.

"If you don't have a laser you have to have a gun and a rod. That takes two people and it's tedious. It's moving a little bit of dirt and shooting with a gun and moving some dirt and shooting it again. With the laser you do everything from the seat of the tractor — from adjusting the height of your target to adjusting the slope if you find out you entered in the wrong degree of slope into the laser."

Connor added: "All of my construction career I've been taught to avoid straight lines and formal features on a golf course to simulate nature's random look. Tees, however, demand precise construction methods."

**HOW IT WORKS**

Connor's equipment includes a tractor, scraper blade and laser apparatus. A laser emitter — with a gyroscope to automatically level it — is mounted on a tripod and set upon a neighboring hillside or even on the tee. The laser receiver is mounted on a "mast" built onto the blade apparatus.

Connor sets perpendicular and parallel axis grades on the emitter's digital readout. He then sets the speed of his laser emitter at around 20 revolutions per second, "which gives me the quick enough response that my blade won't float out of position."

"I try to get a zero grade from side to side — right- and left-handers will have an equal footing on the tee. I'll try to go one to two percent from back to front or front to back, depending on the natural grade."

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"It used to take me at least a month for that kind of work (that took three days with laser technology)." — Ed Connor
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