Superintendents retool regs

Superintendents in Pennsylvania and New Jersey work to change water restrictions. 8

Safety goes high-tech

GPS offers a multitude of safety features from golf car tracking to two-way communication. 19

Drought conditions on East Coast to persist into spring

By A. OVERBECK

The warm and dry winter along the entire East Coast has helped courses increase play and has allowed superintendents to tackle more off-season tasks. However, as dry weather has persisted into March, courses from Maine to Georgia are facing the possibility of entering spring under challenging drought conditions.

Some states have already declared drought emergencies and put restrictions into place and many more states could follow suit. The Long-term forecast from the National Oceanic and Atmospheric Administration (NOAA) calls for a slight improvement but predicts water shortages will continue to persist through May. Among the more staggering drought indicators are:

- The Northeast experienced the second driest September through February in the past 107 years.
- NOAA said the drought, which started in some areas in 1998, is now classified as hydrological because of low ground water, lake and well levels. These droughts typically last longer to end.
- Drought emergencies have already been declared in New Jersey and in 26 counties in Pennsylvania (See related story on page 8). At press time, New Hampshire and Maryland were close to declaring emergencies.

“This winter drought is not unprecedented, but it is unusual for such a large area to share a drought of this magnitude,” said... Continued on page 12

Organic golf activists score major victory

By A. OVERBECK

BROOKLYN, N.Y.—The Long Island Neighborhood Network (LINN) has won a major victory in its battle to make all new golf courses organic. A four-judge Appellate Division panel there unanimously reversed a lower court decision Feb. 25 and ordered the Town of Stony Point to comply with SEQRA (State Environmental Quality Review Act) by completing a full environmental impact statement (EIS) before continuing work on its $18 million Rick Jacobson-designed golf course. The decision builds on a similar lower court victory and settlement in Suffolk County in 1998 (GCN June 1999) that forced the county to commit to making its two new 18-hole courses in Yaphank completely organic. The recent decision, however, could set a precedent on a larger scale since it would apply to Nassau and Suffolk counties in addition to Brooklyn, Queens, Staten Island, Orange, and... Continued on page 5

Gotham, First Union Real Estate to merge

By DEREK RICE

NEW YORK — On the same day National Golf Properties announced its planned merger with American Golf Corp., First Union Real Estate Equity and Mortgage Investments and Gotham Partners LP also agreed to merge. The resulting entity, Gotham Golf Corp., will be a publicly traded company. Representatives from both companies declined to speak on the record for this story because a registration statement had not yet been filed with the Securities and Exchange Commission. There is no formal target date for completion of the merger, although if it has not been completed by August 31, payouts to First Union shareholders increase.

The deal has been in the works for some time now, and has been through many proposed incarnations... Continued on page 20

Toro, GE Capital create financial offering

By ANDREW OVERBECK

BLOOMINGTON, Ill. — The Toro Co. has partnered with GE Capital Vendor Financial Services to provide a branded, single-source financing solution for golf courses and municipalities.

The move not only consolidates the company’s previous financing options but it also gives Toro access to a financing arm that is larger than Textron Financial Services and John Deere Credit. Textron Financial Services and John Deere Credit have managed assets of $9.1 billion and $13 billion, respectively, and GE Capital has served assets of nearly $20 billion... Continued on page 25
Test Drive a SMITHCO and Win an All-Expense Trip for Two to the 2003 British Open

Call Toll Free 1-877-833-7648 and we’ll arrange for a demonstration of any Smithco product.

Test drive any product and here’s what you could win:

- Trans-Atlantic round trip air fare for two from an airport near your home town to the 2003 British Open, July 17-20, at the Royal St. George’s Golf Club in Dover, England.
- Transfers from the airport to your hotel and back.
- DeLuxe hotel accommodations for two for 4 nights.
- Breakfast each morning at the hotel.
- Lunch and dinner at the hotel or at a selected restaurant in the area.
- Cocktail Party.
- Tickets to the British Open each day.

TEST DRIVE a Smithco Trap Rake
The most advanced sand maintenance rakes made with special engineering features to give you perfect firmness and finish. The standard by which other rakes are judged.

TEST DRIVE a Smithco Sprayer
Our all-new, low-profile sprayers offer you exclusive hydrostatic drive and a remarkable level of sophistication at a surprisingly affordable price.

TEST DRIVE a Smithco Sweeper
These sweeper-vacuums hold up to 7-cubic yards of compacted debris. But the first thing you’ll notice is how quiet they run thanks to a polycarbonate liner inside the fan housing.
Live oaks from Arvida's Southwood GC to be used for Navy's reconstruction of 'Old Ironsides'

By ANDREW OVERBECK

TALLAHASSEE, Fla. — Instead of burning the 160 live oak trees cleared to build Arvida's Southwood Golf Course here, MacCurrach Golf Course Construction brokered a three way deal to donate 50 of the trees to the United States Navy to aid in the restoration of the USS Constitution.

The agreement was a win-win-win situation.

"We had less timber to burn, the Navy got the material for nothing, and Arvida appeased the community by finding a positive use for the cleared trees," said Allan MacCurrach, whose company is building the Gene Bates and Fred Couples-designed layout.

The Constitution, which went into service in 1797, is the oldest fully commissioned warship in the world. During the War of 1812, the warship took on the nickname of "Old Ironsides" after winning a battle with the British frigate HMS Guerriere. The Constitution, which is constructed of solid live oak, easily deflected enemy fire, leading the British to think the ship's sides were made of iron.

The Navy has been slowly restoring the ship and began stockpiling live oak trees in 1992. The sections of trees taken from the Southwood site will be used for the reconstruction of the ship's hull framing.

MacCurrach came up with the idea to give the trees to the USS Constitution late last summer.

"Part of my family is from Boston and when we were up there this summer, I heard that the ship was built with live oaks from north Florida," said MacCurrach. "When we took the trees down late last summer, I called the local Navy base and started asking around. You could hear the laughing on the other end of the phone, but three days later I got in touch with the USS Constitution maintenance facility in Charlestown, Mass."

This fall, Gary Morrissette a technical writer with the Navy, came down to look over the trees.

"We went out and made marks on the trees to get the proper curve that we want," said Morrissette. "Two hundred years ago when the ship was built there were a lot of old growth trees, now it is hard to find ones that are big enough and have the right curve in them."

The trees will be used to create a new hull framing, which is made up of sections that are 12 inches thick and 24 inches wide.

All three parties made some sacrifices as part of the deal. MacCurrach had to move the trees to a storage site, Arvida paid an arborist $3,000 to make the proper cuts on the trees and the Navy has yet to arrange transport of the trees back to Charlestown.

"We are working on coordinating with the Navy base down there and will have them on the way back here by June," said Morrissette. "We will start putting the framing together in preparation for a planned overhaul in 2008."

Southwood Golf Course is still under construction and is due to open in September.

---

**Golf Course News**

The shortest distance between broadleaf and grassy weed control.

Drive 75 DF herbicide effectively raises the bar for postemergent weed control. A single, convenient application of Drive quickly eliminates a broad spectrum of both broadleaf and grassy weeds—from crabgrass and foxtail to clover and dandelion—in a wide variety of turf species. Then Drive keeps weeds under control for 30 to 45 days—in some cases for more than 3 months. Drive also offers exceptional seeding and overseeding flexibility—allowing you to seed many varieties of turf immediately before or after application. To learn more about how Drive 75 DF can help you in your drive for turf perfection, call 1-800-545-9525 or visit www.turffacts.com. Always read and follow label directions.

---

**BASF**

We don't make the turf. We make it better.
NEWS

Agency seeks to reduce geese population

WASHINGTON — The U.S. Fish and Wildlife Service is proposing the creation of new regulations that expand the hunting of Canada geese in hopes of reducing the current resident population of 3.5 million by 1.2 million.

According to the Wildlife Service the geese, which used to migrate to the Canadian arctic in the summer, are now living year-round in temperate parts of the country and are causing personal and public property damage. The geese can denude grassy areas including parks and golf courses and have become a safety threat at airports. Excessive goose droppings are also a health concern.

As a result, the agency wants to allow states to undertake approved population control strategies, such as nest and egg destruction, trapping and culling programs and expanded hunting opportunities.

“The service believes that the problems caused by resident Canada geese can be best addressed at the state level,” said agency director Steve Williams. “To that end, we are committed to providing state wildlife management agencies with as much flexibility as possible to address the issue.”

Continued on page 5

Scholarship accepting applications

FORT LAUDERDALE, Fla. — The Grand Tour Scholarship, which offers golf course design and turfgrass management students the opportunity to visit leading U.S. golf courses, is accepting applications. Golf architect Bettina Schrickel, president of Lioness Golf LLC, is again organizing the program, sponsored by the Toro Co.

The scholarship allows four students to visit courses on the East and West Coasts in August. The Western Route leads to 22 golf courses in three weeks, and the Eastern Route includes 25 courses over four weeks. Among the courses to be visited are: Augusta National, TPC at Sawgrass, Cypress Point Golf Club and Pebble Beach Golf Links.

Students from all over the world are invited to apply. Last year’s participants came from England, Germany and the United States. The scholarship covers costs for airplane tickets, rental cars, fuel and hotel accommodations for the duration of the journeys. Deadline for application is May 15. E-mail lionessgolf@aol.com for more information.

USGA program awards grants

COLORADO SPRINGS, Colo. — The United States Golf Association (USGA) awarded a little less than $2 million in grants at its first Foundation Grants Committee annual meeting as part of its “For the Good of the Game” program.

A total of 62 grants were awarded to programs in 27 states, totaling $1,809,925, raising the total that the program has awarded since 1997 to $27 million. The foundation’s goal is to make golf more affordable and accessible to people with economic or physical challenges.
Organic golf activists score victory

Continued from page 1

Dutchess, Putnam, Westchester and Rockland County where the case originated.

"This expands the organic golf concept beyond Suffolk County," said Neal Lewis, executive director of the LINN. "It helps to establish a precedent to make developers at least study the use of organics during the EIS process. This is the first court case that has gone to the appellate level that addresses pesticide use and the construction of golf courses."

While the last two court cases have applied to municipal- or county-owned projects, Lewis said the ruling will apply to private developers once the EIS process is triggered. The law does not force courses to be all-organic, but it requires them to give a "hard look" to organic alternatives.

"It gives environmental activists leverage when working with developers," said Lewis.

12 HOLES ALREADY BUILT

The Town of Stony Point's attorney cannot believe that the court shut down its construction project.

"We started construction in the fall of 2000 after getting approval from the Supreme Court [the state's lowest court] to proceed with construction," said attorney Frank Phillips. "We now have 12 of the 18 holes ready to be grassed. We are $9 million into an $18 million project and we get shut down. We have heavy equipment that is just sitting up there and it is costing the town a significant amount of money." Lewis took the Stony Point case on behalf of a group of homeowners who were concerned that their drinking water would be contaminated by pesticide runoff. They filed an appeal to the Supreme Court ruling in December 2000, arguing that the town had to complete an EIS. While the appeal was being processed, construction was allowed to proceed because Lewis and the homeowners were more concerned about stopping the use of pesticides that would be used when the course was completed.

"They argued that they did not have to complete an EIS because there would be no negative impact from the project," said Lewis. "They maintained that by using Integrated Pest Management, they would not damage the environment. The law states that if there may be an impact, an EIS is necessary. The higher court agreed with us and said that by using IPM the town cannot claim that there is no potential for impact."

Since the EIS process, which can take up to a year to complete, could seriously delay the Stony Point project, Phillips is planning an appeal.

"In the appellate brief they just asked to stop the project before the point of applying pesticides or fertilizers, so we believe that we should be allowed to proceed with construction," said Phillips.

In the meantime, Phillips is recommending that the town start on an EIS, but he is not sold on organic golf.

"We are not opposed to the idea of using organic materials," he said. "But all of the chemicals that we propose to use are being used on every course in Rockland County. If we are forced to go organic and be brown all the time, everyone else using pesticides will be green and the town will have an $18 million project worth nothing." •

Geese control

Continued from page 4

Resident Canada geese are protected under the Migratory Bird Treaty Act and can only be legally taken during hunting season, unless a special federal permit is obtained from the Wildlife Service. The agency is in the process of drafting proposed regulations that would authorize states to undertake a number of population control and management actions without having to go through the permit process.

The Wildlife Service issued its draft Environmental Impact Statement (EIS) March 1 and a 90-day comment period will run until May 30. ■
Influence decision makers or face the consequences

On page 1 this month, Golf Course News outlines the severity of the drought situation along the Eastern Seaboard. But perhaps more importantly, leading off the maintenance section on page 8, we have a story about what two groups of superintendents have done to influence local water restrictions.

Faced with what they thought were overly-penal water restrictions during the drought of 1999, superintendents in Pennsylvania and New Jersey have gone straight to the top to rectify the problem. Three years ago, superintendent Bill Wall at Dauphin Highlands Golf Club in Harrisburg, Pa., took matters into his own hands and drove right up to Department of Environmental Protection (DEP) headquarters to see his case. Finding that officials there were receptive to learning more about the golf course industry, Wall rounded up superintendents from across the state and the educational sessions began.

At the end of February, Pennsylvania’s DEP released revised rules that forced golf courses to reduce water use by 30 percent, but allowed superintendents to determine how and where they would use the water. The timing could not have been better. Pennsylvania has already issued water restrictions because drought conditions have steadily worsened in the last six months. Superintendents in New Jersey have taken it a step further. Forming up with other green industry members, they formed the Alliance for Water Conservation and have been lobbying their DEP to loosen water restrictions. More ammunition is forthcoming from Rutgers University, which is preparing an economic impact study for the golf industry and is creating best management practices for water use on golf courses. Since New Jersey is also under a drought emergency right now, the group is hoping to hear about amended water restrictions soon, before the spring season kicks off.

As drought conditions continue to persist from Maine to Georgia, superintendents in other states should be proactive and start negotiations with their state agencies now if they haven’t already. For many states it is not a question of if, but when drought emergencies will be announced. At press time, New Hampshire and Maryland were close to doing so and recent data from the National Oceanic and Atmospheric Administration suggests that drought conditions will persist well into spring. According to Chris Carson at Echo Lake Country Club in New Hampshire, golfers are starting to show more concern about water conservation.

Andrew Overbeck, editor
Rice joins GCN as managing editor

Golf Course News is pleased to announce the addition of Derek Rice as managing editor. A native Mainer, Rice is a 1996 and 1999 graduate of the University of Maine, where he earned a bachelor's degree in journalism and a master's in English. For the past two and a half years, he has served as managing editor for IT Support News, which became Services News in January 2002. Prior to joining IT Support News, Rice was a freelance writer and a copy editor in the L.L. Bean creative department.

Having been away from golf for a couple of years, Rice looks forward to this opportunity to get back into the game, which he began playing at age 10. At Golf Course News, Rice will focus mainly on the management and development beats.

Market recovery

Continued from previous page

many golf courses, others too few and, in some cases, markets have both—depending on which segment of the market is being examined.

For instance, Palm Beach County, Fla., is one market perceived as having an oversupply of daily-fee golf. Yet the same market is home to several new private projects, which are all reportedly progressing and selling reasonably well. The corridor between Washington and New York is another location with many solid opportunities, both in the private and daily-fee sectors. There are many markets throughout the country with a wide variety of divergent but still positive characteristics.

PRIVATE CLUBS FACING THE MUSIC

The most interesting development I've observed is that of established private clubs, even in strong markets, struggling to compete with less prestigious but newer, more open facilities. Not only do some of the older clubs suffer from the perception of being stuffy, they also suffer from a lack of modern facilities. Prospective members smartly see this lack of modern infrastructure as a potential increased cost, as those facilities will someday require renovation or updating.

Additionally, private club members seem to be more sophisticated, looking for membership deals with either equity or refund ability components which allow for relocations or even movement from one club to another. Many clubs will need to rethink their future programs because in today's climate club members have more options from which to choose.

While the recent golf industry correction may be softening, areas with too many golf courses will continue to experience competitive pricing and invariably, some facilities will struggle or fail. But as some measure of confidence returns, those with experience, a good plan and an eye for positive markets will benefit from the recent downturn through competitive pricing. This, in turn, should stabilize the industry as a whole.

An organic based fertilizer specifically designed for fairways

- Excellent color response
- Improved density & root mass
- Beneficial microbes

roots inc. tel: 800 342-6173 • www.rootsinc.com
Superintendents reshape state water restrictions

By ANDREW OVERBECK

HARRISBURG, Pa. — Following the drought of 1999 when sudden water restrictions forced golf courses in parts of Pennsylvania and New Jersey to cut irrigation use by as much as 90 percent, superintendents in both states turned up with other green industry partners to retool drought emergency rules.

Working closely with each state’s department of environmental protection, the industry has achieved or is close to achieving new water restrictions that will not negatively impact golf courses. The three years of hard work is already paying off, as 26 counties in Pennsylvania and all of New Jersey have declared drought emergencies.

SUCCESS IN PENNSYLVANIA

According to superintendent Bill Wall here at Dauphin Highlands Golf Club, the vague restrictions that the Pennsylvania DEP put forth in the summer of 1999 simply created confusion. “The drought regulations opened the door to the people who were going to abuse them or ignore them altogether,” said Wall. “Some guys got screwed for cutting back because their courses went brown while others who ignored it had green turf.”

Spurred on by the late Dave Raftery who was the superintendent at Chambersburg Country Club, Wall put together a group of superintendents from across the state and the DEP held meetings to discuss flaws in the regulations. “They didn’t have any golf course experts,” Wall said. “This stuff is a different language to golf course superintendents.”

Moss hits Colorado hard, more research needed

By KEVIN ROSS, CGCS

DENVER — A recent symposium here brought superintendents from across Colorado together to discuss the sudden invasion of moss on greens. The problem is clearly widespread, as more than 140 superintendents attended the meeting to learn more about how to combat the rapidly spreading bryophyte. There are still, however, more questions than answers.

The symposium featured Dr. Tony Koski from Colorado State University; Matt Nelson from the United States Golf Association’s Green Section; Matt Giese from Syngenta; and John Wyme from Bio-Safe Systems. Rusty Oetker from Soil Solutions also held a roundtable discussion. The group presented information about the spread of moss, various research efforts, and possible control options.

According to Dr. Koski, controlling moss is difficult for three central reasons. “Moss is a very resilient and tough plant and we don’t really know that much about it because there has been little hardcore research done,” said Koski. “It is also very difficult to selectively eradicate.”

In Colorado, the moss plant on greens has been identified as Silvery Thread moss or B. argenteum.

Flowtronex study quantifies water quality concerns

DALLAS — Pump station manufacturer Flowtronex recently conducted a survey of 603 randomly selected golf course superintendents to determine their attitudes toward awareness of water quality issues and solutions. The study purposely targeted areas of the United States known for having high pH, carbonates and bicarbonates, excessive algae growth, etc.

The study was overseen by Flowtronex’s director of marketing Tom Lewy. The following results were collected:

• Overall, 63.3 percent of respondents said they are concerned about water quality issues and 36.7 percent said they don’t really know that much about it because there has been little hardcore research done.

• Seventy-two percent use a lake or pond for irrigation water on their course and the average number of pump stations used by a facility is 2.2 (although the majority, 59 percent, have only one).

• Eighty-eight percent of respondents had some level of familiarity with liquid fertilizers.

• Seventy-two percent use both liquid and granular fertilizers on their courses. Although most don’t feel strongly that either type is definitely better than the other, superintendents with an opinion prefer liquid fertilizers to granular (29.7 percent to 19.3 percent, respectively).

Flowtronex study quantifies water quality concerns

Continued on page 13

Risk management plan can prevent accidents, litigation

By TED HORTON, CGCS

Golf can be a dangerous sport and the potential for danger from negligent design and maintenance exists on many courses. Golf car mishaps, environmental concerns, slips and falls throughout the property, maintenance equipment accidents and exposure to weather can all result in serious injury to golfers, guests and employees.

Considering our litigious society and the fact that insurance rates have escalated since Sept. 11, it has become even more important to implement a sound risk management program to help prevent injuries and property damage, as well as to protect against liability.

Courses should first inventory areas of potential liability. These include four basic areas: premises, operations, vehicles and natural causes. By no means is the following list all-encompassing. Examine your own operations and list every possibility for exposure to accident or injury and review the checklist quarterly.

PREMISES

Risks are abundant throughout a golf course property both on and off the course.

• Examine course design for defects. Are balls entering private properties, roads or adjacent holes? Are there blind tee shots, dangerous doglegs or other places of concern? Are waiting areas adjacent to tees safe? Remember that 85 percent test it less often number of pump stations used by a facility is 2.2 (although the majority, 59 percent, have only one).

• Examine course design for defects. Are balls entering private properties, roads or adjacent holes? Are there blind tee shots, dangerous doglegs or other places of concern? Are waiting areas adjacent to tees safe? Remember that 85 percent test it less often number of pump stations used by a facility is 2.2 (although the majority, 59 percent, have only one).

Bill Wall’s Dauphin Highlands Golf Club in Harrisburg, Pa.
How do you get more power to the root of your weed problem?
The proof is in the leaf. Monsanto scientists used scanning-electron microscopy to photograph the effects of weeds sprayed with Roundup PRO and an imitator. Taken just one hour after application, these images clearly show more formulation in the leaf sprayed with Roundup PRO.

Get Roundup PRO® herbicide with patented PROformance™ technology.

In the first two hours, it delivers three times more power to the roots than Syngenta’s latest imitator product.

The proof is in the roots. Scientists also used autoradiography to photograph and measure the amount of herbicide in the roots two hours after application. Time after time, at least three times more herbicide showed up in the weeds sprayed with Roundup PRO. With the imitator, barely any herbicide has moved to the roots.
Scientific photography taken two hours after application shows three times more Roundup PRO in the roots. More color means more herbicide.

This weed, sprayed with the imitator, has almost no droplets in the leaf.

This is a cross-section of a weed leaf magnified 1000x. The yellow droplets mean Roundup PRO is already at work inside.

Syngenta's latest imitator product

In the first two hours, almost no imitator herbicide has moved to the roots.

The proof is in your control.
See for yourself the difference Roundup PRO with patented PROformance technology can make in your weed management. See your dealer or call 1-800-ROUNDUP for more information.
Free video shows science in action.
See PROformance technology at work in a free, five-minute video. Scientists Dr. Tracey Reynolds and Dr. Jimmy Liu demonstrate the autoradiography and cryo-SEM techniques used to compare Roundup PRO with an imitator on two identical weeds.

Call 1-800-ROUNDUP and ask for your free Roundup PRO video today!

Always read and follow label directions. Test conducted with MON 77360, EPA Reg #5204-475 with comparison to Syngenta product carrying EPA Reg. #10182-449. 1. Test methodology: In scanning-electron microscopy, Monsanto scientists identified penetrated formulations of both Roundup PRO and Touchdown Pro in the mesophyll cell layer. These micrographs support the evidence that formulations containing Monsanto’s patented PROformance technology rapidly penetrate the leaf surface. 2. Test methodology: Radiolabeled formulations were applied at equal acid-equivalent rates. Radioactivity was visualized by autoradiography following a simulated rain event two hours after application. Monsanto laboratory tests, 2001. Roundup®, Roundup PRO® and PROformance™ are trademarks of Monsanto Technology LLC.
Effective safety program begins with proper equipment

When it comes to meeting government mandated safety regulations for grounds workers, most superintendents know the basics. Many safety precautions are common sense – you need hearing protection when working around noisy equipment and you need safety goggles when working with moving, weed-eating or chainsaw equipment.

However, it is important to periodically review your work environment to identify specific hazards that your employees are exposed to and make sure you have a good understanding of the minimum safety requirements mandated by law.

The Occupational Safety and Health Administration (OSHA) requires employers to provide a workplace that is free from recognized health and safety hazards and to protect employees from those hazards when and where they occur. State laws vary and may be more stringent.

The Environmental Protection Agency's Federal Insecticide, Rodenticide and Fungicide Act relates to pesticide use and establishes the Worker Protection Standard (WPS) that applies to pesticide application activities such as mixing, loading, application and cleanup. It also applies to those working in or around treated areas and establishes restricted entry intervals for each pesticide and the minimum personal protective equipment (PPE) needed to handle and apply each product.

The following list provides safety equipment recommendations for activities around the golf course that warrant proper safety procedures.

**LOUD EQUIPMENT**
- Earplugs with a suitable decibel rating, reusable or disposable
- Respirators, gloves and coveralls are essential equipment when handling chemicals

**STEEL-TOED SHOES**

**SAFETY GOGGLES**

**DUST MASKS**

**RESPIRATORS**

**GLOVES**

**HARD HATS**

**STEEL-TOED SHOES**

**RESPIRATORS**

**DUST MASKS**

**GLOVES**

**HARD HATS**

**STEEL-TOED SHOES**

Reduce accidents

Continued from previous page

percent of the golf shots are usually 15 percent off line and that equipment and golf ball improvements result in

- Ventilation systems in golf car storage buildings, acid storage, battery disposal, energy management and equipment wash facilities are all areas for potential accidents.
- Are golf car paths appropriately located, designed, engineered, constructed and maintained? Is speed controlled and are warning signs posted at holes?
- Pedestrian paths, steps and bridges need to be free from trip hazards.
- Trees are a source of numerous accidents on courses. Inspections should monitor the potential for eye injury from low-hanging branches as well as injury from falling branches.
- Practice range accidents can occur if the range is improperly designed, maintained and operated. Are tee stations adequately separated, are protective barriers in place, and are participants properly controlled?

**OPERATIONS**

Proper maintenance procedures are required to present the golf course for play, but risk management and safety should be of equal importance.

- Environmental concerns related to pesticides, fertilizers, water quality and quantity and energy need to be addressed. Misuse or abuse of these materials can lead to serious damage and significant exposure to liability.
- Golf course construction projects may be a source of accidents. Are open trenches properly marked? Is every care taken when digging around utilities?
- Are trenches protected against cave-in? Is your golf course's equipment adequate for the task?
- Waste management and recycling in an appropriate manner can prevent environmental contamination.
- Safety training for general maintenance operations such as mowing, fertilization and irrigation, acid dressing and fungicide use are all areas for potential hazards.
- Personal protective equipment must be provided, fitted and used when required. Current Occupational Safety and Health Administration policies could potentially result in hearing loss being imposed on employers who don't follow the requirements to provide workers with hard hats, goggles, fit-tested respirators and safety spray suits, and other protective gear needed for personal protection.

- Repetitive-motion problems are common in golf course maintenance operations. Precautions to avoid injury to employees who hold their wrists, arms or shoulders in odd positions or who frequently perform the same tasks continuously for long periods need to be in place.
- Drivers and passengers of utility vehicles and golf cars need to follow the same precautions as those who are in their own motor vehicles.
- Caution golfers about the presence of poisonous plants, snakes, alligators, fire ants, etc. Evidence of awareness will generally reduce liability awards should a suit result from injury from these hazards.

Effective safety training and risk management programs are important for recovery, should a disaster strike. But it is not enough. Golf course superintendents must consider the tasks of safety training and risk management as the highest priorities within their operations. Zero accidents should be the goal for the entire golf course staff.

Ted Horton, GCSS is the head of Ted Horton Consulting in Canyon Lake, Calif.
Dalton cutting his teeth at Copper Hills G & CC

By ANDREW OVERBECK

OXFORD, Mich. — Andrew Dalton, here at the 27-hole Copper Hills Golf & Country Club, started working on golf courses when he was in high school and has slowly worked his way up to a head superintendent's position. He has been in the top spot at Copper Hills since 1998, but continues to set his career objectives high.

“I want to become a Certified Golf Course Superintendent by the time I am 30 and become a Master Greenkeeper by the time I am 35,” said Dalton. “And one time in my life I’d like to host a tournament.”

Dalton, however, is quick to recognize the superintendents who have helped him get to where he is today. He credits Paul Reising, who is currently at Prestwick Village in Milford, and former superintendent John Gray for the agronomic knowledge that he has today.

“Those guys were a big inspiration to me and we still keep in contact,” said Dalton. 

GROWING IN

Copper Hills, which has been built nine holes at a time over a four-year period, is owned by Curtis Wright who also runs the last two nine-hole expansions. The course sits on 367 acres, has 100 home sites. As the community, which currently has 16 homes, continues to evolve, Dalton will be involved in expanding the course’s infrastructure.

“Right now we are working on plans for a clubhouse and a new maintenance facility,” Dalton said. “We have also built more tees, redone some of the bunkers and continue to build rock walls and add landscaping.”

He also hopes to start getting water soon from the sewage treatment plant that is currently has 16 homes, and we still keep in contact,” said Dalton.

Dalton, however, is quick to recognize the superintendents who have helped him get to where he is today. He credits Paul Reising, who is currently at Prestwick Village in Milford, and former superintendent John Gray for the agronomic knowledge that he has today.

“I want to become a Certified Golf Course Superintendent by the time I am 30 and become a Master Greenkeeper by the time I am 35,” said Dalton. “And one time in my life I’d like to host a tournament.”

Dalton, however, is quick to recognize the superintendents who have helped him get to where he is today. He credits Paul Reising, who is currently at Prestwick Village in Milford, and former superintendent John Gray for the agronomic knowledge that he has today.

“The course is one of the toughest in Michigan,” said Dalton. “It plays under 6,900 yards, but has a slope rating of 145.”

TRACKING WORKERS AND ENVIRONMENTAL IMPACTS

Working at a development that is still in flux means that Dalton has to work within a restrained budget.

“We have a little under $400,000 and since 65 to 70 percent of that is taken up by labor costs, I have concentrated on improving efficiency in that area," he said. Dalton has formulated numerous “scouting sheets” allowing him to track workers and ensure productivity. "When my workers arrive in the morning they see their tasks for the day on the board and grab the appropriate route sheet,” explained Dalton. “It lays out what he is supposed to be doing, the order that he is supposed to do it in, and the time table in which he is expected to finish.”

As a result, Dalton knows where his crew is at all times and can easily check up on them to see if they are behind or ahead of schedule. He said it is especially helpful in cases of emergency or equipment breakdown.

Dalton applies a similar formula to the "scouting sheets" he developed for his assistants. “I have put the basics of Integrated Pest Management (IPM) into a four-page notebook,” he said. “It is an easy reference for them to use when identifying insects and diseases and it allows them to record and track damage symptoms. “It gives me a better sense of when I need to spray and helps me cut back on chemical use," he added. “We want to be as environmentally safe here as possible because we have homeowners.”
Equipment
Continued from page 9

- During tree removal and other overhead activities, a good hard hat should be provided.

CHEMICAL APPLICATION AND STORAGE
Pesticide labels contain minimum recommendations and WPS standards must be met including:
- Chemical-resistant gloves such as 15 mil or thicker 100 percent nitrile gloves should be used.
- Coveralls or chemical resistant aprons.
- Splash goggles (not safety glasses)
- Disposable shoe or boot covers
- A respirator
- A plumbed-in eyewash station should be available in your mixing and loading area.
- Eyewash belt packs should be worn by applicators.
- Pre-packaged spill response kits which include: absorbent materials, labeled disposal bags, emergency PPE-like gloves, goggles, respirators for responding to pesticide or flammable material spills.
- Properly labeled green pesticide cabinets
- Yellow safety cabinets for flammable materials

SUMMER HAZARDS
Safety and employee productivity is challenged during hot summer weather and electrolyte-replacement beverages like Gatorade ensure good hydration. Recommended intake is at least 16 ounces before work, five to 10 ounces every 15-20 minutes during work and 24 ounces for each pound of body weight lost through perspiration after work. Other important items include:
- Safety sunglasses
- Vented pith-style helmets
- Sunscreen
- Disposable sweatbands
- Insect repellent
- Insect sting relief pads
- Poison oak and ivy pre-treatment lotion
- Cold packs and first aid kits

ENSURING COMPLIANCE
Once employees are properly equipped and trained about how to work around hazards, there remains the task of actually making sure they adhere to safe work practices and wear the equipment provided. Fortunately, manufacturers keep improving their products, making them more comfortable to wear and easier to use – and that helps. For example, new equipment like breathable coveralls, safety glasses in more fashionable styles and disposable respirators with cooling exhale valves are now available.

— Jim Costopulos

We’re flattered that competitors keep attacking Pendulum. That’s what happens when you set the industry standard for excellence.

Golf Course News

Jim Costopulos is president of Compliance Safety Inc., an outdoor safety products distributor.
East Coast drought already forcing water restrictions

Continued from page 1

NOAA drought specialist Douglas LeCompte. "Our historical data shows that you tend to have some improvement going from a winter drought into spring and summer. But even if we get a couple good storms we will have some lingering impacts as we go into summer because wells and reservoirs are so far below normal. We are still in drought territory."

LeCompte added that storms in late February and early March had little impact on helping reservoirs and ground water supplies bounce back.

**DEVELOPING A DROUGHT PLAN**

Superintendents, especially those who got hit by the drought of 1999, are already starting to prepare for potential drought conditions, water restrictions and increased disease pressure.

The first step in dealing with dry weather is to develop a drought plan.

"After checking your irrigation system to eliminate leaks and ensure efficiency, you start off by watering less," said Brian Vinchesi, design engineer for Pepperell, Mass.-based Irrigation Consulting and president of the American Society of Irrigation Consultants. "After that you stop watering the rough, then you cut out the fairways except for landing areas, and then fairways altogether. If things get worse you have to decide whether you stop irrigating tees, but you can't stop watering greens."

Another key to efficiency is to increase the control over the irrigation system, said Vinchesi. Superintendent Tim O'Neill at the Country Club of Darien (Conn.) did just that this winter. "We went from a system that had 230 heads to one that has 1,000 heads," O'Neill said. "With individual control I can put the water exactly where I want to put it." Such control could come in helpful if watering restrictions are put in place this summer, he added.

However, some courses are flat out running low on water resources. Superintendent Billy Lewis at Carolina National in Bolivia, N.C., pulls water from lakes that are five feet below normal. This fall his course spent $50,000 to buy water from the county in order to overseed $20,000 worth of seed. Conditions have not improved this winter.

**AGRONOMIC CONCERNS**

According to David Oatis, director of the United States Golf Association Green Section's Northeast region office, if drought continues into the summer, superintendents will experience increased disease pressure.

"Any stress-related disease such as summer patch, anthracnose, dollar spot, localized dry spot and fairy ring become problems in a dry year," said Oatis. Lewis has already had outbreaks of dollar spot. "We have spent a lot more money this year controlling dollar spot due to the warmer temperatures and dry conditions," he said.

Drought conditions will be compounded, said Oatis, by damage caused by higher levels of winter play that many courses experienced.

"We have to get a record for winter play this year," he said. "And there is a direct relationship between heavy winter play and more summer stress and disease problems." Chris Carson, superintendent at Echo Lake Country Club in Westfield, N.J., stuck to his guns this winter and kept members playing on temporary greens.

"With the dry weather the damage is not as bad, but we feel closing in winter is better for the course in the summer," he said. "We just opened some back up this week, but will hold off on opening all of them for a while longer."

With water restrictions and disease pressure looming, superintendents agree that the best approach is to reduce stress on the turf. Aeration and verticutting will be out and stockpiling up on wetting agents, surfactants and plant growth regulators will be in. The key will be having the water resources to properly apply those products.

"The money you were spending on fungicides will now go toward labor for hand watering and wetting agents," said Bill Wall, superintendent at Dauphin Highlands Golf Club in Harrisburg, Pa.

**COMMUNICATION IS THE KEY**

Just as local governments are starting to grease the skids by promoting water conservation habits, superintendents are taking a proactive approach to communicate the potential impact of drought conditions to members, green committees and golfers.

"I am formulating a plan right now," said Carson, whose course is hosting the USGA Girls Junior National Championship in July. "We have a green committee meeting next week and I am going to lay it out step by step about what the possibilities and probabilities are and what the potential loss is. I also need to talk about investing in wetting agents, explain the use of plant growth regulators and discuss raising the height of cut."

While timely rains could make a big difference and help courses get through the dry spell, it is important to explain that this year could be different.

"When the water is down you have to make sacrifices. This is not the year to plant ornamentals and annual flowers. It is not the right time to do a lot of renovation work," said Wall. "We also need to educate golfers that lean and mean is better. We sell green, but the game is better played on a firm, fast and dry surface."
Superintendents retool restrictions

Continued from page 8

them, and we really lead the way in rewriting some drought regulations. They will still reduce water use, but it will make it more manageable for professionals in the field.

The new restrictions were unveiled in late February. Golf courses must submit a watering plan to their commonwealth drought coordinator and are allowed to water at an average daily rate that does not exceed 70 percent of the course’s five-year calendar month basis quantity.

Watering is still limited to the hours of 5 a.m. and 10 a.m., but hand watering and syringing is allowed during the day.

“We didn’t mind restricting water use, but we wanted to be able to have the ability to use the water how we saw fit at our course,” Wall said. “We simply told them that if they wanted to cut the water back, they should let us as professionals decide how to use the water.”

According to Ron Ruman with the Pennsylvania DEP, Wall and other green industry members were very helpful. “We are trying to work with all businesses so that they can continue to operate,” he said. “But we hope that all courses follow the letter of the law and reduce the quantity that they are using because this is a very serious situation that we are in.”

Ruman said that local police will enforce the new policy and all golf courses must submit plans to their commonwealth drought coordinator before beginning any irrigation this season.

NEW JERSEY REGS IN LIMBO

Superintendents in New Jersey have taken a similar approach to reworking water restrictions, but are still waiting for confirmation from officials with New Jersey’s DEP.

“We started meeting with the DEP in 1999 because they required other industries to cut back water use by 25 percent, but golf courses were forced to reduce use by 90 percent and only water greens and tees,” said Chris Carson, superintendent at Echo Lake Country Club in Westfield. “We felt it was unfair from an agronomic and economic standpoint and we have worked hard as an industry to get a logical plan in place. We have not achieved that yet, but they have heard us and we hope that we will be treated as a business and not as a luxury item.”

The entire green industry in New Jersey came together to form the Alliance for Water Conservation and has been working with Rutgers University to quantify the economic impact of the turfgrass industry and formulate best management practices for

water use on golf courses.

“Golf is currently labeled as non-essential by the state,” said Glenn Miller, superintendent at Manasquan River Golf Club. “But the green industry is a billion dollar industry in New Jersey. Similar to those in Pennsylvania, we have been working with the state to come up with a workable year-round conservation plan cuts back water use, but that lets us use the water where we deem necessary.”

With restrictions imminent, Miller expects new rules to be announced soon and is optimistic that they will be easier on golf courses.

“We are in better shape now than we were three years ago,” he said. “Being proactive is the key.”

Delaware, Audubon

Continued from page 11

environment.”

Audubon International’s president and CEO Ron Dodson hopes Delaware’s efforts will catch on in other states. “One-hundred percent participation in the program nationwide may occur some day,” he said. “But at least today, we are one step closer to that goal. I hope that the DSGA initiative will be replicated in states and regions throughout the country.”

Other preemergents talk a lot about crabgrass. With Pendulum, it never comes up.

Pendulum herbicide consistently controls crabgrass better than other preemergent herbicides. What more can we say? How about Pendulum controls a broader spectrum of weeds than any other preemergent—more than 40 grassy and broadleaf weeds, such as oxalis and spurge, in all. It also controls costs, to offer you greater value. Plus, Pendulum comes in granular and liquid formulations, and BASF pendimethalin is available on fertilizer from Scotts and Helena, for maximum application flexibility.

With Pendulum, there’s just so much more to talk about than crabgrass. To learn more about why everyone’s talking about Pendulum, call 1-800-545-9525 or visit www.turffacts.com. Always read and follow label directions.

We Don’t Make The Turf. We Make It Better.

BASF
BRIEFS

NELSON TO RECEIVE DONALD ROSS AWARD FROM ASGCA

CHICAGO — Byron Nelson has been selected to receive the 2002 Donald Ross Award from the American Society of Golf Course Architects (ASGCA), which will be presented at the Donald Ross Banquet on April 30 in Santa Barbara, Calif. Among Nelson’s many accomplishments is his assistance in the annual Veronica Byron Nelson Classic. The Donald Ross award is presented annually to an individual who has made significant contributions to the game of golf and the profession of golf course architecture.

SADDLE HILL TO GET A NEW START

HOPKINTON, Mass. — Developers Joe Pasquale and Dan McLaughlin have started transforming the former public golf course known as Saddle Hill to a family country club. Architect Ian Scott-Taylor will oversee the renovation, which is expected to be completed by July. The renovation, which Scott-Taylor described as a classic 1930-era design approach, will use the existing topography to create fairways cut from natural grasses. Pasquale and McLaughlin, also plan to construct a 15,000-square-foot clubhouse, adjacent to which will be a sun deck and pool.

GCBAA ELECTS BOARD MEMBERS

LINCOLN, Neb. — The Golf Course Builders Association of America (GCBAA) recently elected six new directors and re-elected four directors to serve for the next two years. The newly elected directors are Ellen Davis of Greensmix; Sam Sakocius of SAJO Golf, Rob Stumbaugh of Quality Golf Inc., Bob Steele of SEMA Golf LLC; Dennis Wagner of Rain Bird Corp., and James York of York Bridge Concepts. Scott DeBolt of JacklinGolf, Kirk Kyster of Landscapes Unlimited LLC, Rick Lohman of the Toro Co. and Willie Slingerland of Flowtronex PSI were re-elected to the board.

DEVELOPMENT

Houston development boom leads to renovations

By DEREK RICE

HOUSTON — Like most places in the country, the Houston area has seen a lot of golf course development in the last decade. As a result, most of the projects that are underway now, according to Richard Luikens, a consultant for Richard Luikens Golf Services, are renovations.

“In the Houston area, we’ve had such an influx in the last five to seven years. Thirty to 40 new facilities have opened up, and they’re all tapers and go,” Luikens said. “We can only think of three golf courses that are under construction in the Houston area right now, and there is not a lot of talk of many more.”

One Luikens project that is underway is a renovation of Lakeside Country Club. The $2 million project broke ground on Feb. 11 and has a reopening target date of July 15. The project includes complete renovation of the greens, replacement of the entire concrete cart path system and expansion of the irrigation system. Luikens is working with general contractor Wadsworth Construction, architect Ron Frichard and superintendent Terry Hutcherson on the project. The timetable is important to Luikens, said, because until mid-July the club’s membership has no place to play.

“We spent a lot of time and effort putting the schedules together and getting the contractor in place and the materials in place so that we can turn the golf course back to the membership in a very short time,” he said.

At the moment, members are forced to

HILLS, FORREST SEE BUILDING MARKET HEATING UP

By DEREK RICE

TOLEDO, Ohio — Denny Spencer of Arthur Hills/Steve Forrest and Associates said his firm has seen an upswing in the number of new projects it’s being asked to bid.

“New work went on hold between June and December last year, but I’ve seen a change in the last four weeks where people are starting to move forward with new projects,” Forrest said.

That’s not to say that renovation numbers aren’t a little higher than normal.

“When I counted up the renovation projects we had, we do have quite a few,” Forrest said. “It still probably accounts for 50% of the projects. It may be 30 to 40 percent at other times.”

The size and scope of the projects the firm is working on recently, such as the first nine holes of a 27-hole renovation at Ivanhoe Country Club in Ivanhoe, Ill., has increased as well, which Forrest said may be another indicator that the industry is turning around.

“There seem to be more extensive renovations these days than perhaps there would have been in the past,” he said. “Most of them are rebuilding the majority if not all of their greens, certainly all the bunkers and upgrading the tee complexes with too many exceptions.”

In total, the firm is handling about 15 renovation projects, five or six of which—in varying stages—are Forrest’s responsibility.

There are two main reasons course owners look to renovate, Forrest said.

Continued on page 16

Pistol Creek looks to videotape

By JOHN TORSIELLO

BERLIN, Conn. — The owners of recently opened Pistol Creek Golf Club here have come up with unique marketing strategies to make play more enjoyable and keep golfers at the club once they finish their rounds.

Pistol Creek, which opened this month, has cameras located near the 18th green that capture approach shots and action around the hole. The tape is shown on a 15-minute delay in the club’s restaurant and lounge.

“It’s just a fun thing to do,” said Gary Schiarrillo, president of the Milford-based GRS Group, which developed, owns and manages the new course. “Whether you have a great round or a mediocre one, being able to go into the grill room and look at the tape, and realize you made a little longer. To my knowledge it isn’t being done anywhere else.”

The owners of Pistol Creek say they have further made their course player-friendly by limiting the total number of annual rounds to around 29,000 to ensure speedy play.

“We are limiting the rounds because we want people to get around the course in no longer than four and a half hours,” said Schiarrillo, whose company was the consultant and project manager for Great River Golf Club in Milford.

“We’re taking a more long-range view rather than filling as many tee times as possible. We want to have a pleasurable experience and come back.”

To monitor pace of play, cameras will be installed at several key locations on the course. Golfers will not be let out until the previous group is on the first green. Rangers will patrol the course displaying a series of flags informing groups of their pace.

“We feel the flag system is a non-confrontational way to handle course patrol,” said Schiarrillo. “Green means everything is OK, yellow means you’re a little slow, and red means pick it up and move to the next hole.”

Continued on page 18

Spencer building the course of his dreams

By DEREK RICE

TOLEDO, Ohio — Denny Spencer of Spencer Golf Concepts will be the first to tell you that his course at Sad-

dlehorn, an upscale pub-

lic course located just west of his hometown of Swanton, where the horses are bred in Swanton, where the

Continued on page 16
**Garl goes with paspalum at Crown Colony**

By Derek Rice

FT. MYERS, Fla. — While Crown Colony Golf & Country Club is a "fine golf course and a great community," according to architect Ron Garl, its grass is a major attraction as well.

The Garl-designed course, which opened in late February, uses the certified hybrid paspalum developed by the University of Georgia. The grass is attractive, Garl said, because it can survive on salt water and brackish water. "This is the first major breakthrough in warm-season grass in 30 or 40 years," Garl said. "There are a lot of places in the world that have brackish water and this grass is going to help."

Even after the course opened, crews continued to pump brackish water onto the grass.

"We're pumping mostly effluent water on it, wastewater, but it runs 2,400 parts per million of salt, and it's doing very well," Garl said. "It won't take constant salt water, but it will take brackish water and it will take salt water if you flush it once the salts builds up in the root zone and the soil."

Garl said his firm is looking at two or three more places, in Florida and the Caribbean, where paspalum would be beneficial. "If you think about all the places in the world that are close to the ocean that would like to have a golf course but don't have a constant source of fresh water, this is going to be a major breakthrough," Garl said. "Our golf course is one big laboratory right now. As time goes on, we'll know more. We're very pleased at this stage with how this is handling the water."

The environmental impact of using the hybrid paspalum was another factor that contributed to the decision to use it at Crown Colony, Garl said. "We think it's very important to be good stewards of the land. We

**Program some of our greatest hits into your playlist.**

Here's just a few of the seed titles you've come to know and love.

**SIGNATURE MARVELOUS GREEN RYEGRASS BLEND** is a well-known blend containing top-rated varieties such as Palmer III and Prelude III. It's extremely wear tolerant and is well-suited for any application in any region, including overseeding in the South.

**SIGNATURE CLOSE CUT BLUEGRASS BLEND** contains three of the best Kentucky bluegrass varieties including Princeton 105, Apollo and Rambo to provide top performance under close mowing conditions.

**SIGNATURE TRINITY PERENNIAL RYEGRASS BLEND** is a three-way blend of the finest perennial ryegrasses available, including the highly-rated Palmer III, making this blend an excellent choice for tees, fairways and sports turf.

**SIGNATURE DIVISION I SPORTS TURF MIX** is a quick-establishing turf mixture containing three top perennial ryegrasses plus one topnotch Kentucky bluegrass variety improved wear tolerance.

**SIGNATURE STADIUM MIX** contains three excellent tall fescue varieties including Scorpion, Shenandoah II and Gazelle as well as Dragon Kentucky bluegrass to produce good sod forming qualities with outstanding drought and heat tolerance.

---

For more information, contact your local UHS representative [www.uhsonline.com](http://www.uhsonline.com)
Houston boom leads to renovation
Continued from page 14
play at other facilities, but Luikens said the course owner has a unique way to deal with that problem.

"The golf pro actually secured daily tee times at other facilities. His membership basically has a lottery system. His members call in and there's, say, 30 or 40 tee times and the club is picking up the cost of the green fees," he said. "When you think about it, the member is still being charged his monthly dues, and he doesn't have a golf course to play on. I admire the golf course stepping up and doing that for the membership. It's a way to appease the membership because they don't have a course to play on."

THE DRIVE TO RENOVATE

Money, Luikens said, is one driving factor behind most renovation projects. Rather than trying to build a new course, owners are looking at ways to breathe new life into existing facilities.

"It's a little tough to borrow money right now to build a golf course. If you've got an established club, owners can go out and borrow the money because they're just improving their own property, but they're not betting on the fact that they're going to sell lots or they're going to attract a new membership or a new set of golfers," Luikens said. "They have already captured their audience."

Another driver is the need to update courses that were built many years ago and bring them up to a level where they are competitive with the newer courses that are being built.

"[In the Houston area] we had a lot of golf courses that were built in the '70s that are, I hate to use the word 'worn out,' but they are," Luikens said. "They're 25 years old, and they don't meet the expectations of today's golfers. With all the new properties that have opened up that do meet the golfers' expectations, the other guys have got to keep up, so they've got to put money into their projects.

"Technology just in construction methods has changed so much in the last 25 years that just to keep up, the new kid on the block is better, whether he really is or not, just because he's got updated technology in his construction," he added.

Garl goes with paspalum
Continued from previous page

want to be good neighbors and we want to be environmentally sensitive," he said. "Using this new grass is just another step in that direction. We want to build golf courses that lie softly on the land."

Garl also had nothing but praise for the project's contractor, Highland Golf.

The Ron Garl-designed Crown Colony Golf & Country Club uses hybrid paspalum.

"You can't build a great golf course without a great contractor," he said. "Often the contractors don't get enough credit. The architects get too much. These really fine golf courses come from a combination of good owners, great sites and contractors that have the ability to pull it all together with the architect."
Spencer building dream course
Continued from page 14

you have to have something that makes it different and sets you apart from the average golf course so people are interested in coming there," Spencer said. The front gate is modeled after the entrance to a farm Spencer saw in Lexington, Ky., and three-rail fences will follow the road to the clubhouse. In the Champions Grill, one wall will feature Kentucky Derby winners, while another will feature the likes of Nicklaus, Palmer and Hogan.

"COUNTRY CLUB FOR A DAY"

Spencer said his vision is to make Saddlehorn a "true country club for a day." To that end, he has designed wide fairways so average golfers can find their tee shots and big greens because, as Spencer said, "the average guy likes to hit a lot of greens and be able to find his ball and keep moving." There won't be any tricks on this course, Spencer said.

"The bottom line is a golfer has to have fun. He may not necessarily play really well, but I don't want him losing a dozen balls or hitting a really good shot up over a blind rise only to find out there's a swamp on the other side," he said. "I want all of my hazards to be visible, I want all of my landing areas to be wide and accessible. I don't want the greens to be all tricked up."

NATURAL COURSE DESIGN

The design for Saddlehorn follows Spencer's philosophy of natural course design, he said.

"You take a piece of land and rather than just rip it apart from fencepost to fencepost, you try and find all the natural features on the site and build your golf course into the site itself so that when you're finished it looks like it's been there for 20 years," Spencer said. "It's all geared toward keeping an owner's cost down and being able to get as many golfers as possible to come back over and over again. That's what natural course design is really all about."

This philosophy is especially important because the land Saddlehorn will be built on surrounds two reservoirs for the city of Swanton. While this presented a challenge in the design, Spencer said he and his partners have come up with several ways to keep fertilizers and pesticides away from the water, both now and in the future.

"We're going to use creative grading. All surface water will literally run away from the reservoir to a large series of basins. And we're going to create a 15-foot barrier of vegetation between the water's edge and any place that we begin to maintain," Spencer said. "We're using chemicals that have very low migration rates and very short half-lives. We're trying to use things that we put down in frequent applications but very light applications so that they're down, they're on the ground, the plant takes them up and they're gone. Even considering the fact that we're going to contain all our surface water, I still want to be extra cautious about the chemicals we actually use."

LaPlaya Resort course re-opens

NAPLES, Fla. — LaPlaya Beach & Golf Resort, a Noble House Resort, has opened an 18-hole Bob Cupp-designed golf course, featuring a driving range, practice area and 15,000-square-foot clubhouse. The course is open for resort guests and LaPlaya private club members, and is part of a $45 million renovation of the resort.

Cupp created a completely new course routing. During construction, contractors moved 600,000 cubic yards of dirt to create the course's contours. In addition to preserving the majority of the property's existing vegetation, more than $1 million in landscaping was planted or moved.

BUNKER

RENOVATION:

CASE STUDY #43

Steve used to dread rainy weather.
After most storms, he would spend $1,900 to $2,500 on labor, repairing water damage on his bunkers.

Steve was looking for answers to his bunker problem and found a solution that works. He turned to an advanced technology from IVI-GOLF.

Sandtrapper™ lines the bunker and ends the routine of sand trap maintenance. It prevents washouts and sand contamination while eliminating short renovation cycles.

Steve made the right decision. Now, he spends a lot less money on labor. This keeps the course owners satisfied and leaves room in the budget for a few things he's had his eye on. He's happy to have found the right solution.

Stop dreading rainy weather and short renovation cycles. Take control of your labor budget with Sandtrapper by IVI-GOLF. Call 888-970-5111 today and we'll send you a product information guide to learn more about Sandtrapper.

Contact IVI-GOLF today!!
888 - 970 - 5111
www.sandtrapper.com

©2002 Indian Valley Industries, Inc. Sandtrapper is a trademark of IVI-GOLF 2002. All rights reserved.
Pistol Creek innovates
Continued from page 14

next hole.”

The course will also provide caddie service to golfers requesting it, and plans to add a few new twists in their food and beverage operation.

Schiarrillo said Pistol Creek, so named because the course sits on the site of the state’s first pistol factory, was designed with the average player in mind.

"The majority of golfers are in the 10 to 25 handicap range. We wanted to make Pistol Creek a place where those golfers would be challenged and not be overwhelmed," he said.

The result is a course filled with modest sized holes with generous fairways and gently contoured greens. The course presently measures just 6,450 yards from the back tees, although there are plans to stretch it to around 6,800 yards.

"We designed this course from the middle tee boxes," said Schiarrillo, a former tennis pro turned golf nut. "We have par fours that many players can try and drive and par fives they can try and reach in two. They might not do it, but they’ll have fun trying."

Pistol Creek, however, is no pushover. There are a number of forced carries off the tee box and from the fairway, with ample wetlands lining a number of holes. The layout places a premium on accuracy and proper club selection.

Schiarrillo, Phil Katz, an employee of GRS, and representatives of Vero Golf of Vero Beach, Fla., were involved in the course’s development. The Connecticut firm Site and Earth Technologies assisted GRS in the construction of the course.

The owners of Pistol Creek have kept greens fees in the moderate range, $65 on weekends and $55 on weekdays, cart included. A limited number of memberships are being offered in the club’s initial year of operation.

The course has bentgrass greens, fairways and tee boxes with bluegrass/fescue rough. There are two practice facilities on the property, including a golf learning center directed by noted teaching professional T.J. Tomasi.

Looking ahead, Schiarrillo said GRS has approval to build a course to be known as Waterwheel on 380 acres of land in the Great Gorge area of northwest New Jersey.

Building rebound
Continued from page 14

The first is to remain competitive with the upscale public courses that have emerged.

"I think [the clubs] felt the effect of some members who instead of paying monthly dues just go play some of these new upscale public courses and have the same experience and more variety," Forrest said.

The second reason revolves around some sort of problem with green complexes and other cosmetic-type issues, Forrest said.

"Perhaps [the green complexes] were constructed many years ago and have just deteriorated or they are rebuilding them so the superintendent will have the best possible growing medium to grow grass," he said.

As for the future of new courses, Forrest said his firm is optimistic that the demand will return sooner rather than later.

"We’re just starting to see some new inquiries in 2002. We’re encouraged by what’s been happening here," he said.
National Golf, American Golf weigh merger options

By DEREK RICE
SANTA MONICA, Calif. — The proposed merger between American Golf Corp. and National Golf Properties (NGP) has been the talk of the golf industry of late. At press time, nearly a month after the initial announcement, both companies were still mum about the specifics of the deal, and that wasn’t sitting well with investors and industry experts.

“We don’t know the exact terms of this deal, and you wonder why more information hasn’t been forthcoming,” said Dan Boyle of Schwarin Boyle Capital Management.

Within days of the mid-February announcement, several law firms had filed class-action lawsuits against NGP, alleging fraudulent practices on the part of the company’s leadership. Boyle said he doesn’t think these suits will have any merit or bearing on the proposed merger.

“Class action lawsuits are a matter of course. There are law firms that make their living any time a stock price goes down, they will file,” he said. “There have been management errors, sure, but whether it’s fraudulent, I just don’t think so.”

NGP owns more than 300 golf courses and leases 118 of those to American Golf. American Golf has technically defaulted on lease payments, but a forbearance period extended by NGP was set to expire on March 14. Representatives from both companies declined to comment on the merger or the class-action lawsuits.

One of the conditions of the merger is for a third-party equity investor to provide capital to the combined company. The identity of that potential “white knight” has yet to emerge, although there are rumored a-plenty. Sam Potential, none of which could be substantiated.

WHERE DO WE GO NOW?
On Feb. 21, a week after the merger was announced, NGP’s stock price hit a new 52-week low, at $4.30, which was nearly 85 percent of its 52-week high of $21.75 on July 18, 2001. Several industry insiders have pointed to NGP’s joint purchase of Cobblestone properties with ClubCorp as the

Management companies watch merger

Regardless of the outcome of the National Golf Properties/American Golf Corp. merger, there will be opportunities for both ownership and management companies in the future, according to Mike Kelly, vice president of marketing for Meadowbrook Golf.

“I think because of the deals that were made, there’s going to be a lot of opportunity within the next 18 to 36 months for management companies who are positioned well and who are smart about how they’re going to go about growing,” he said.

At press time, Meadowbrook was finalizing multiple financing deals with major financial institutions.

Continued on page 22

GPS increases on-course safety

By DEREK RICE
While global positioning systems (GPS) mounted on golf cars may seem like an extravagance courses can live without, in the event of an emergency, they can be an important safety tool. Two of the top golf car companies, ClubCar and E-Z-GO, have teamed with GPS companies UpLink and ProLink, respectively, to add these items to their portfolio of offerings.

According to Jeff Connolly of UpLink, safety isn’t always the first thing golf course owners and operators think about when evaluating the benefits of using GPS. Eliminating slow play and allowing players to order food from the course are usually top in their minds.

“I think that [safety] is secondary item in the course’s mind, and it may not even be in their mind, but we raise it as an ‘oh, by the way,’” he said.

Connolly said the golf course is the fifth most likely place for a person to suffer a heart attack outside of the home. That was just one of the reasons that UpLink incorporated a safety element into its offering.

“We built into the system an emergency call button. Someone can notify the clubhouse they’ve got a medical emergency,” he said.

While many golfers may think they could rely on their cell phones in the event of an emergency, communicating an exact location is very difficult, said Ron Skenes, marketing communications coordinator for E-Z-GO, a division of Textron.

“With a cell phone, you’re getting to the emergency crew, but then you have to tell them where you are, whereas if

Continued on page 21

System credited with saving three lives

By DEREK RICE
During the due diligence stage of its partnership with UpLink, ClubCar learned about some instances in which the UpLink system had saved lives.

These cases came as welcome news to Jeff Connolly of UpLink.

“ClubCar was doing their due diligence on us, so they called all of our customers and asked all kinds of questions, and they found some things out about what our customers’ experience has been that we didn’t know,” he said. “There were three lives that were attributed to having been saved by the use of the UpLink system.”

Two of those instances were heart attacks, while the third was a bee or wasp sting that caused an allergic reaction, Connolly said.

“Not only were they able to notify the course that there was a problem, but their location was known by the course, so they knew where to send the EMS folks precisely where they were,” he said.

“The fellow with the anaphylactic shock problem was saved, and the EMS folks reported that he didn’t have much time left if he hadn’t gotten that injection when he did.”

Continued on page 21

PALMER GOLF CONTINUES GROWTH

By DEREK RICE
ORLANDO, Fla. — In keeping with its previously announced goal of adding five courses to its management portfolio by the end of the first quarter, Arnold Palmer Golf Management has taken over management of the Donald Ross-designed Green Oaks Country Club in Verona, Pa.

Contracted with the firm’s earlier agreement to manage Stone Ridge Golf Club in Bowling Green, Ohio, this latest agreement further advances Palmer Golf’s move into the central United States, said Chris Hamill, Palmer’s vice president of development.

“It’s a great opportunity for our company because it’s a market that we have not been in in the past,” he said. “That region has not seen a Palmer-managed facility yet. With Green Oaks, we’re 30 minutes from Mr. Palmer’s back yard in Latrobe. We’re really excited about that.”

The firm hopes to parlay these agreements into future contracts, Hamill said.

“It’s exposure in a region that hasn’t seen us before, so we’re hopeful that it opens more doors for us for future opportunities, management contracts or otherwise,” he said. “We are talking with some facilities, but nothing far enough along that I could call them real deals yet.”

As far as growth and performance, Hamill said Palmer has set modest goals to allow the firm to make strategic investments rather than add numbers to its portfolio.

“We’re not gunning to be the biggest,” he said. “It’s been a tough industry for the last couple of years and we’re just looking to grow in a smart fashion that has positive effects — financially and otherwise — for the company.”

Continued on page 22
Growth behind KemperSports reorganization

By DEREK RICE

NORTHBROOK, Ill. — The mid-February reorganization of KemperSports Management was based on the company’s growth and its desire to keep the golf course ownership/leasing and third-party management sides of the business separate, according to Steve Lesnik, the company’s CEO.

KemperSports, which owns and operates 75 courses, organized its ownership side as KKL (Kemper, Kemper, Lesnik) and its management side as Kemper Golf Management. The company has seen quite a bit of growth in just the past two years, Lesnik said, and the company expects to see more in the near future.

“We’ve been growing rapidly over the last couple of years and you get to a point where you’ve got to look at your organization and say, ‘Are we organized in the way to give the most efficient service to our clients and customers?’” he said. “We decided this would be the best way to organize for the next couple of years. I would imagine that as we continue to grow we will continue to reorganize — tweak our organization, change it in ways that make us responsive to the marketplace.”

However, growth for growth’s sake is not part of the equation, Lesnik says.

“We’ve always used the term controlled growth for the organization,” he said. “We’re looking to take properties that we think we can digest and we think we can do a good job in either an ownership or a management capacity.”

As for the state of the golf industry, Lesnik said he is cautiously optimistic it will turn around sooner rather than later, but KemperSports is prepared to weather the downturn, regardless of its duration.

Gotham, First Union to merge

Continued from page 1

since mid-2001. Last September, the two signed a letter of intent, which became the basis for the merger. At press time, the only open items were that the SEC had to approve a registration statement and a proxy.

Under the agreement, First Union shareholders have the opportunity to convert their entire stake in the company to cash, or purchase shares in the public company at $20 per share, up to an aggregate of $41 million. Gotham Partners has agreed to be a standby purchaser of $10 million in common Gotham stock.

Based on First Union’s 34.8 million outstanding shares, the total value of the transaction could be close to $890 million if all shareholders choose an all-cash payout. As in the American Golf Corp./National Golf Properties relationship (see story on page 19), First Union and Gotham Partners share several common investors and board members, and Gotham Partners owns 17 percent of First Union. In this post-Enron world, even the appearance of a conflict of interest can be damaging to a company, so this deal will formalize what had previously been a private partnership.

The merger will allow Gotham Golf will to leverage the cash that First Union has on hand to pursue further acquisition of golf courses. Based on the $41 million equity of the stock offering, and assuming 70 percent leverage, the company would be able to borrow more than $130 million for acquisitions. In what seems to be a buyer’s market for golf courses, that money could help the company grow its portfolio substantially.

Gotham Partners owns and operates 26 golf courses, 21 of which are within a 250-mile radius of its Hershey, Pa., headquarters. Once the merger is finalized, Danny Mays will be the CEO, John Caprioletti will be the president and chief operating officer and William Ackman will be the chairman of the board.
GPS delivers on-course safety

Continued from page 19

you can get a message straight to the pro shop, they can send somebody out for assistance, call 911, meet the EMTs as they show up and get them directly to the person who needs medical help," he said. "There are a lot of ways to speed the response to a medical emergency with the ProLink system."

Another problem with relying on a cell phone, Connolly said, is that many private courses have taken steps to ban cell phone use, making the UpLink system even more important in those situations.

"You'll still have the capability of two-way communication with the UpLink system," he said.

Because the systems are relatively new and the emergency call is button so prominent, the clubhouse will quickly verify that an emergency situation has occurred, Skenes said.

"If the clubhouse gets an emergency message from a car, they will normally respond with a message that says, 'Is there an emergency or did you press the emergency button by mistake?" he said.

WEATHER WARNINGS

Another element GPS brings to the table is the ability to broadcast weather warnings to all the cars out on the course. In one instance, Connolly said, a course in Texas that was using an UpLink licensee's product was able to alert players that a destructive tornado was on its way and clear the course in five minutes — without risking the safety of its employees by sending them out to warn players.

Because the systems allow the clubhouse to know where every golf car on the course is within a few meters, courses can track where their players are at all times.

"There are areas on the course where it is very hazardous to drive a golf car. A steep embankment is not a good idea," Connolly said. "In fact, if you've got golfers out on a Saturday afternoon, they may have had three beers on the first nine, you don't want to drive that golf car in certain places. So one of the things GPS enables is to define with the course a restricted area and should a golf car enter that area, they're alarmed immediately and told to come back."

FUTURE FEATURES

The biggest challenge in selling clubs on the GPS element, Skenes said, is getting them to realize that the safety aspect can pay for itself.

"Where we are right now in this process is just getting course managers to understand that this is far more than a digital yardage book. It's more of a course management system and there are more benefits to this than most people realize," he said. "It's beginning to be accepted, but right now, it's an education process."

Once management understands all the aspects that are there, Connolly said, a light bulb comes on in their heads.

"In fact, it comes on so bright, they're asking us for things we haven't even finished yet," he said. One of those customer-driven areas UpLink is working on is the ability for players to "see" beyond a blind shot. Once completed, the "look-ahead" system will show players where the golf car, and therefore the group, ahead of them is on the hole. So instead of blindly hitting over a rise and hoping for the best, players will be able to judge how far over the rise the group in front of them is.

"It places the responsibility back on the golfer to make the shot or not make the shot. It's basically giving them visibility," Connolly said. "Golf courses have real concern about liability, so that is one of the features we'll add."

Liability is the name of the game, Connolly said.

"I think in our litigious society, it seems like if anything happens, it's always someone else's fault. There's always somebody to sue and typically, you sue the guy with the deep pockets — the owners of the club or the golf car company if there's any way they can implicate them," he said.

Want season-long control of disgusting, turf-damaging grubs? The proven performance of MACH 2® specialty insecticide provides superior, broad-spectrum control. Its wide window of application allows you to treat grubs through the second instar — and there's no need for immediate irrigation. Unbeatable control. Gorgeous turf. Things are looking better all the time.

ALWAYS COMES THROUGH. ALL SEASON LONG.

www.dowagro.com/turf  1-800-298-3726 Always read and follow label directions. *Trademark of Dow AgroSciences LLC
Merger options
Continued from page 19

turning point for the company.
"They over-leveraged when
they bought the Cobblestone
courses with ClubCorp," Boyle
said. "They should never have
done that transaction."

The final outcome of this pro-
posed merger could be one of
two things, according to indus-
try sources. The deal could go
through, either as proposed or
with slight modifications, or
NGP's creditors could decide that
the value of the assets is greater
than the combined debt of the
two companies. A third outcome,
which would have NGP filing for
bankruptcy protection, has been
discussed, but Boyle said he
doesn't see that happening.

"I don't think NGP goes bank-
rupt, but the lenders may feel
that the value of the assets is
greater than the debt," he said.

With such a large portfolio, NGP
doesn't have many options. There
are few, if any, management com-
panies who would have the abil-
ity, not to mention the desire, to
take on a substantial number of
those. However, that's not to say
that if certain courses became
available, either from an owner-
ship or a management perspec-
tive, there wouldn't be any takers.

"As the competitive landscape
changes, you've got to be ready
to react," said Mike Kelly, vice
president of marketing for
Meadowbrook Golf Group.

Kelly said the situation at
American Golf and NGP is a
symptom of the boom time the
golf industry experienced in the
90s, and may be indicative of
the problems that many manage-
ment companies are experienc-
ing in today's market.

I think what happened was
that people lost sight of the fact
that they were not in the devel-
opment and acquisition busi-
ness," Kelly said. "The manage-
ment companies understand how
to operate effectively, but when
they can't support and service
the debt, they really are behind
the eight ball from the start."

Kelly stressed that he doesn't
feel the management at American
Golf or NGP has done anything
wrong in pursuing a merger.

"We're just trying to look at
what we do and make our world,
and how we react and progress,
better," he said.

One industry official, speak-
ning on the condition of anonym-
ity, said the main reason NGP
got into trouble is because the
real estate investment trust
(REIT) model just doesn't work
in the golf industry.

"That structure, as we've seen,
is fundamentally flawed," the
source said. "When you separate
the owner of the property from
the operator and the manager of
the property, there are all kinds
of conflicts, and you lose a lot of
flexibility. If things go well, the
guy who leased them does very
well. If things go poorly, the pub-
lic company does badly."

Waiting game
Continued from page 19

to give the company access to
capital so it can take advantage
of the buyer's market and grow its
portfolio. Because the deals had
not been finalized, Kelly declined
to name the potential backers.

"It is worth a considerable
amount of money because we are
poised for growth," he said.

"We've taken a look at what we're
doing strategically and how we're
going to grow both geographi-
ically, as well as product type.

We've got a very clear plan for the
future have a great opportunity at
people who are in control."

As in any market that is expe-
riencing trouble, Kelly said, the
golf industry could be in for an
upheaval.

"That's an old saying that when
an industry is in the ditch or is
having problems, it is not uncom-
mon for the Davids to overtake
the Goliaths," he said. "Therefore,
the companies that are smart and
position themselves well for the
future have a great opportunity
at hand. The companies that haven't
done that will probably end up in
some sort of consolidation.

"Those that are smart, who can
take advantage of the situation
right now and who have thought
through the process, are poised
to make significant growth and
significant strides," he added.

— Derek Rice
PBI Gordon’s SpeedZone launch going strong

By ANDREW OVERBECK

KANSAS CITY, Mo. — PBI Gordon Corp. has enjoyed a strong launch of its new active ingredient carfentrazone-ethyl since receiving registration from the Environmental Protection Agency in late September (GCN Nov. 2001). The company obtained the exclusive marketing rights for non-agricultural uses of carfentrazone-ethyl from Philadelphia-based FMC Corp. in 1998.

Carfentrazone-ethyl is being marketed under the company’s ProForm Brand as three different formulations: SpeedZone, PowerZone and SpeedZone St. Augustine formula. While there are slight differences between the formulations, all three of the broad-spectrum, post-emergent, selective herbicides offer control in cool weather, visible results in 24 hours, and dead weeds in three to seven days. It is also rain-fast in three hours, is

Percent clover control:

- SpeedZone
- Trimec Classic
- Millennium Ultra
- Confront
- Manor

Source: Dr. Tim M. Griffin, University of Georgia

The herbicide, which contains the active ingredient rimsulfuron, offers both pre- and post-emergence activity at low one- to two-ounce rates. It is especially formulated for the removal of Poa annua before overseeding and the removal of overseeded turf during the spring transition. However, it can also be used to control Poa annua in non-overseeded fairways.

Dr. Harold Walker at Auburn University has been working with rimsulfuron since 1998. “The product contains similar chemistry to Manor and Corsair,” he said. “But Manor and Corsair do not control Poa annua or Poa trivialis. TranXit also has a short half-life so you don’t have a problem with running or lateral movement.”

Continued on page 26

Simplot expands agribusiness division

BOISE, Idaho — J.R. Simplot has reorganized its turf and horticulture group and placed it under its newly expanded agribusiness division. Bill Whitacre, who has served as president of the turf and horticulture group since May 2000, has been named president of the agribusiness group, replacing Larry Hoshik who has become the company’s new CEO.

Joel Barker will replace Whitacre as vice president and general manager of the turf and horticulture group. Barker joined Simplot in 1989 and most recently was vice president of finance and administration of the turf and horticulture group.

The agribusiness group will be made up of manufacturing and wholesale fertilizer sales, Simplot Grower Solutions, and the turf and horticulture group which includes Jacklin Seed, BEST and APEX fertilizers, the Simplot Partners distribution network, and international seed and fertilizer sales.

“We have an opportunity to align our core resources in a highly efficient and effective manner,” said Whitacre. “The new structure better positions us to continue our focus on meeting and exceeding our customer’s expectations.”

Continued on next page

Aquatrols receives Radiance registration

CHERRY HILL, N.J. — Aquatrols has received both state and federal registrations from the Environmental Protection Agency for its pre-emergent copper-based algicde, Radiance.

The company originally named the new product Repel, but had to change the name due to EPA registration issues. Radiance is a pre-emergent pond management tool that uses a copper-based algicide with a unique delivery system. The product can be applied in one spot and will quickly disperse uniformly throughout the entire body of water. The formulation also allows the product to stay dispersed much longer and can prevent algae blooms for about a month.

Lesco posts loss, names new CFO

CLEVELAND — Lesco, Inc. has posted record sales for the fourth quarter and full year of 2001, up two and one percent, respectively.

While sales for the full year were up to $594.3 million over $499.6 million for 2000, the company still posted a net loss of $2.9 million. Fourth quarter sales were $105.3 million. Fourth quarter sales were $105.3 million, compared to $102.8 million in 2000. The company, which usually posts a fourth quarter loss due to the seasonal-ity of its business, lost $5.6 million for the quarter.

“For Lesco and for our entire industry, 2001 was a difficult and challenging year,” said William A. Foley, chairman and CEO. “We are pleased with our working capital management, debt reduction and sales performance, but our operating and net income results are unacceptable. We are committed to regaining our earnings momentum, and are taking the necessary steps to return to profitability.”

The company said a sluggish economy and the events of Sept. 11 kept the company from leveraging its cost base and resulted in a relatively flat operating loss year over year.

Lesco’s new chief operating officer, however, is confident the company will return to profitability this year. “Although U.S.
Dakota Peat expands factory, product line

EAST GRAND FORKS, Minn. — Dakota Peat & Equipment has completed the expansion of its production facility here. The new 80,000-square-foot building quadruples the company’s production capability and was built to keep up with the demand for its line of topdressers, dethatchers, blenders and soil movers.

The company also recently announced several new product additions including the 1012 Soilmover and an updated version of the 440 Turf Tender.

The 1012 Soilmover features a hydraulic ripper blade with a single or dual tilt 10-foot blade. The system is laser adaptable and the hydraulic ripper system features 12 ripper shanks adjustable to four positions for use in grading and shaping, ditch cleaning and sloping, and mud and snow removal.

The 440 Turf Tender now has a Shur-loc cover making it an all-weather machine and preventing fine materials from becoming airborne. The unit also features a new digital tachometer for the spinners to ensure greater accuracy in spreading materials.

Lesco profits

Continued from previous page

ECONOMIC FORECASTS CONTINUE TO REFLECT UNCERTAINTY, we have identified market share expansion opportunities in our core business segments and product lines, and expect sales growth in the range of four to five percent," Michael DiMino said. "Coupled with improving raw materials cost and the benefits from expense reductions, we expect to return to profitability in 2002."

In other news, Lesco has named Jeffrey L. Rutherford to replace R. Breck Denny as the company’s senior vice president and chief financial officer. During the transition, Denny will remain with the company in a consulting capacity.

Rutherford will report to William Foley and will have responsibility for all financial management functions, including banking, accounting, credit, taxes, Securities and Exchange Commission reporting, and investor relations and communications.

Prior to joining Lesco, Rutherford was senior vice president and chief financial officer for OfficeMax, Inc. He also spent 14 years with the accounting firm Anderson.

"Rutherford brings an extensive accounting background, experience as a chief financial officer in a public company and knowledge of the retail store operating environment," said Foley. "He will play a pivotal role in our ongoing efforts to strengthen the business and improve profitability."

Rain Bird developing moisture probes

GLENDORA, Calif. — Building off the roll out of its residential MS-100 model, Rain Bird Corp. is developing a moisture sensor for use in agricultural and golf markets.

The unit measures soil moisture levels and automatically supersedes scheduled watering cycles when a sufficient level of moisture is detected. The sensor will be compatible with nearly every irrigation controller on the market and can help increase efficiency and reduce water use.

The MS-100 detects moisture levels using two horizontally-placed carbon rod probes at the driest point of the irrigation system. When the probes detect soil saturation caused by rainfall or irrigation, they bypass water cycles until the moisture level drops below a user-adjustable setting.
Toro teams with GE Capital to provide branded financing solution

Continued from page 1

"Previously we had no formal agreement for either irrigation or turf equipment," said John McPhee, regional business manager. "This is a next-generation product. We have put the Toro brand on it and it is all-encompassing, from irrigation to turf equipment."

McPhee, who helped structure the GE Capital agreement, said the financing solution will help Toro compete more directly with Textron and John Deere, but pointed out that the company will concentrate on cash flow-based lending.

"As long as the customer is creditworthy and meets the qualifications, we can provide financing beyond Toro products," he said. "Things like design fees, installation costs and pump houses can be added in."

FINANCING A POPULAR OPTION

According to McPhee, approximately 75 percent of equipment purchased today is being financed either through a manufacturer's financing program, a local bank, or a national provider.

"Financing is becoming a larger part of the business solution that we are trying to provide our customers," he said. "As Wall Street money and management companies have gotten into golf courses, making it easier for customers to manage business expenses, the financing agreement also makes it easier for Toro to manage its customer base.

"Now we can look at our customers and see which ones have leases coming due and be proactive in our approach," McPhee said. "But it is more than a tool to drive sales. It also gives us the ability to control and influence the financing services and make sure we have a quality offering."

ANOTHER SALES TOOL

Just as a master lease makes it easier for customers to manage business expenses, the financing agreement also makes it easier for Toro to manage its customer base.

"We are not advocating one solution over another," he continued. "That is why we chose GE Capital. They have a lot of flexibility and with their size it allows you to have a long-term relationship, which is important. When it comes to financing, you are more concerned with the second, third and fourth transaction."

With the solid growth in leasing over the last five years, the secondary turf equipment market has been expanding as well. With the new financing arm in place, McPhee said Toro will be better positioned to take advantage of that expanding marketplace as well.

"When we had several partners, it was hard to manage and monitor the equipment coming back," he said. "We will be looking at remarketing options and placing refurbished equipment back into the market with an extended warranty. That is a big opportunity because it allows us to get to a different price point and still offer a reliable product."

Toro's distributors will administer the financing program and they are all currently being trained by GE Capital and outside consultants. McPhee said the financing service is currently available and all distributors will be trained by May.
Carfentrazone-ethyl

Continued from page 23

registered as a reduced risk compound, and carries a "caution" label. All have use rates below 0.62 percent for carfentrazone-ethyl.

According to FMC’s Jim Walter, carfentrazone-ethyl "explodes" cell walls, allowing for rapid activity and long-term control. "It is a protox inhibitor that stops chlorophyll synthesis and without chlorophyll the plant eventually dies," he said. "The quick burning of weed leaves is caused by a build-up of peroxide in the cell, which ruptures cell membranes and causes them to dry and disintegrate rapidly."

"A build-up of peroxide in the cell ruptures cell membranes and causes them to dry and disintegrate rapidly."

— Jim Walter

speedZone is designed for northern turf, Bermudagrass and zoysia and contains a four-way mix of carfentrazone-ethyl, 2, 4-D, metsulfuron-methyl and dicamba. The phenoxy actives and dicamba broaden the weed control spectrum and adds systemic activity, said turf and ornamental market manager Doug Obermann.

POWERZONE

In the PowerZone formulation, PBZ Gordon substituted 2,4-D with MCPA. "We did that for two reasons," said Obermann. "Some communities are more sensitive to the use of 2,4-D and the EPA limits golf courses to two applications of 2,4-D a year. Once you have made two applications, you have reached your limit. We had to have another solution."

As a result, the use rates and costs are slightly higher, but Obermann said the formulation is also a little stronger on weeds like oxalis because of the MCPA. ST. AUGUSTINE FORMULA

While all three formulations have been selling well, Obermann reported that the company has sold out of its first production run of the St. Augustine formulation. St. Augustine is primarily marketed to the Florida market for use on St. Augustine grass. It is also used on courses that have Bermudagrass, zoysia and seashore paspalum.

TranXit herbicide

Continued from page 23

OVERSEeded TURF

In overseeded turf TranXit can be applied two weeks prior to overseeding to remove the germinating Poa annua stands. When overseeded with ryegrass and Poa trivialis, the Poa annua is then out-competed by the overseeded turfgrass.

"The label came out in October, which was too late for application prior to overseeding in most markets," said Griffin. "But we used it down in Florida and we have had some good success."

However, the herbicide will also be useful in helping courses speed the transition out of overseeding come April and May.

"By spraying the ryegrass and Poa trivialis, we remove it from the Bermudagrass and allow for a faster green up," said Dr. Walter. "It does not harm the Bermudagrass. There may be a slight yellowing occasionally, but it lasts for seven days and is gone."

NON-OVERSEeded TURF

Walker reported that courses that did not overseed their Bermudagrass have been using TranXit this winter to control Poa annua.

"A course here used it at a one ounce rate in January and got nice control," said Walker. "As the plants get larger they get harder to control. If you have a high population it takes several weeks to control so you have yellow areas over time that are not attractive."

A better approach, said Walker, is to make a one-once application in the fall to control "quarter-size" Poa annua and repeat in late January or February. Another approach would be to use TranXit in late fall with a tank mix of pentimethalin or prodiamine. "This kills the first flush and provides residual control for the remainder of the Poa season," said Walker.

GOING FOR THE GREENS

Griffin decided to hold off on a greens label for TranXit this fall to get more use data.

"We didn’t have enough data," said Wilson. "Greens are cut lower, and more of the work was done on fairway height Bermudagrass. Plus there are a lot of new ultradwarf varieties, so we wanted to be more cautious."

The company submitted the label extension March 15 and hopes to get it approved by July 15 for use this fall.
**New Holland ready with TC30**

New Holland's new three-cylinder, 30-hp TC30 tractors deliver a wide variety of high-performance features including a choice of transmissions, two- or four-wheel drive or front-wheel drive axle. The 9.6 gpm total system hydraulic flow provides the TC30 with ample power and live hydraulics provides a three-point hitch lift of 1,635 pounds. A separate 3.5 gpm steering pump maintains responsive hydrostatic power-steering, no matter what other hydraulic demands are made. Numerous implements are available including: rotary tillers, front blade, snow blower, backhoes, flail mower, rear finishing mower, rear rotary cutter and front loader.

For more information, contact: 888-290-7377.

---

**Spectrum Technologies rolls out portable soil moisture probe**

Spectrum Technologies has developed the Field Scout TDR300 soil moisture probe to help turf managers measure soil moisture anywhere, anytime. The portable sensor enables the user to gather information at several different points across the field for a more comprehensive and accurate assessment of irrigation needs. The unit features a LCD display of soil moisture in two different modes. The volumetric water content mode indicates the percentage of water in the soil at the sampling depth. The relative water content mode reports the result to user-defined wet and dry set points for use in irrigation scheduling. The Field Scout can then indicate how much water is needed to bring the level up to the wet set point.

For more information, contact: 800-248-8873.

---

**Toro introduces new 800S and 720G series sprinklers**

The Toro Co. has introduced the 800S series of heavy-duty sprinklers for golf course applications. Available in valve-in-head and Check-O-Matic models, these sprinklers offer a radius throw ranging from 52 to 98 feet, a four inch pop-up height and a full selection of nozzles color-coded by radius and gallonage. The constant velocity, gear-driven design incorporates a double-turbine seal to keep oil in and water out and extend sprinkler life. A special riser seal also guards against debris contamination and traps sediment before damage to the valve or seat can occur.

For block systems, tee boxes, approaches and special needs areas, the company is ready with the 720G series. Self-cleaning, multi-matrix adjustable flow nozzles offer precise irrigation in difficult-to-water areas. The unique assembly, which sprays water simultaneously from up to seven separate ports, allows simple flow adjustments. The trajectory system allows trajectory adjustments from seven to 25 degrees and radius adjustments from 20 to 38 feet.

For more information, contact: 909-688-9221.

---

**Bench-Mate doubles as storage**

Cascade products has introduced the Bench-Mate golf course storage bench. The unit, which was designed to be attractive and functional, is made of UV stable polyethylene and can be mounted to the ground. Golf courses can use the Bench-Mate in a variety of ways including: keeping beverages cold during golf outings, storing divot mix material, storing tools and gardening materials, and as a bench to sit on at tee boxes. The bench is 20 inches high, 35 inches wide and 20 inches deep, has a 27 gallon capacity and can store 100 cans and ice.

For more information, contact: 303-487-9000.
Moss symposium
Continued from page 8
(although some still debate this). Moss is classified as a bryophyte, which have no roots, no vascular system, and reproduce vegetatively and/or by spores. Since moss is unable to translocate chemical products, this is a major problem for control measures. Moss also has the physiological ability to sustain drying out up to 80 percent for a period of two years and still not die. Each plant also has the ability to produce 50 million spores.

WHAT CAUSED THE INVASION?
Moss has become a big problem in Colorado and elsewhere in the United States for four reasons.

First, older snow mold fungicides such as PMAS and Calo-clor contained mercury that some think had a side effect control on moss. With those products now off the market, moss has taken root. According to Matt Nelson, cultural practices have also aided moss development. Lower cutting heights, low nitrogen fertility, and the thatch/topdressing layer all contribute to moss.

"I've never had anyone tell me that they have a moss problem on collars, tees or fairways," Nelson said. "In reality, we can't cut our greens at 3/16 of an inch, but this might solve the problem."

While greens might have excellent internal drainage, the thatch/topdressing layer at the upper surface of greens is a perfect breeding ground for moss. The development of a perched water table can also contribute to thatch development and also from using a finer sand particle size than the original construction root zone mix.

Syngenta's Matt Giese raised a fourth possibility that algae is a precursor to the development of moss. This has been indicated by some of the research done by Larry Stowell of Pace Consulting in California. That research was based on the use of chlorothalonil (Daconil) to control algae and to ultimately prevent moss development.

MORE RESEARCH NEEDED
While research on moss is not abundant, it is occurring. There are four sites of research at the moment: Dr. Rossi at Cornell University, Dr. Cook at Oregon State University, Dr. Yelverton at North Carolina State University and the work already mentioned at Pace Consulting.

The research data available from these sites, however, differs in its consistency. For example, Dawn dishwashing soap worked very well in the California studies, but ranked poorly in the Oregon studies. Since results vary significantly depending on site climatic conditions, this is a big stumbling block for Colorado (and other states), as there has been no work done in a climate with arid summer conditions.

Of all the control options, Dawn dishwashing soap (which is not registered) appears to be the product with the most consistent control results, and Daconil can be used as a preventive measure. New products with some promise for control are: Terracyte, Junction and a mix. That research was based on the work of researchers at Colorado and elsewhere in the United States for four reasons.

First, older snow mold fungicides such as PMAS and Calo-clor contained mercury that some think had a side effect control on moss. With those products now off the market, moss has taken root. According to Matt Nelson, cultural practices have also aided moss development. Lower cutting heights, low nitrogen fertility, and the thatch/topdressing layer all contribute to moss.

"I've never had anyone tell me that they have a moss problem on collars, tees or fairways," Nelson said. "In reality, we can't cut our greens at 3/16 of an inch, but this might solve the problem."

While greens might have excellent internal drainage, the thatch/topdressing layer at the upper surface of greens is a perfect breeding ground for moss. The development of a perched water table can also contribute to thatch development and also from using a finer sand particle size than the original construction root zone mix.

Syngenta's Matt Giese raised a fourth possibility that algae is a precursor to the development of moss. This has been indicated by some of the research done by Larry Stowell of Pace Consulting in California. That research was based on the use of chlorothalonil (Daconil) to control algae and to ultimately prevent moss development.

MORE RESEARCH NEEDED
While research on moss is not abundant, it is occurring. There are four sites of research at the moment: Dr. Rossi at Cornell University, Dr. Cook at Oregon State University, Dr. Yelverton at North Carolina State University and the work already mentioned at Pace Consulting.

The research data available from these sites, however, differs in its consistency. For example, Dawn dishwashing soap worked very well in the California studies, but ranked poorly in the Oregon studies. Since results vary significantly depending on site climatic conditions, this is a big stumbling block for Colorado (and other states), as there has been no work done in a climate with arid summer conditions.

Of all the control options, Dawn dishwashing soap (which is not registered) appears to be the product with the most consistent control results, and Daconil can be used as a preventive measure. New products with some promise for control are: Terracyte, Junction and a mix. That research was based on the work of researchers at Colorado and elsewhere in the United States for four reasons.

First, older snow mold fungicides such as PMAS and Calo-clor contained mercury that some think had a side effect control on moss. With those products now off the market, moss has taken root. According to Matt Nelson, cultural practices have also aided moss development. Lower cutting heights, low nitrogen fertility, and the thatch/topdressing layer all contribute to moss.

"I've never had anyone tell me that they have a moss problem on collars, tees or fairways," Nelson said. "In reality, we can't cut our greens at 3/16 of an inch, but this might solve the problem."

While greens might have excellent internal drainage, the thatch/topdressing layer at the upper surface of greens is a perfect breeding ground for moss. The development of a perched water table can also contribute to thatch development and also from using a finer sand particle size than the original construction root zone mix.

Syngenta's Matt Giese raised a fourth possibility that algae is a precursor to the development of moss. This has been indicated by some of the research done by Larry Stowell of Pace Consulting in California. That research was based on the use of chlorothalonil (Daconil) to control algae and to ultimately prevent moss development.

MORE RESEARCH NEEDED
While research on moss is not abundant, it is occurring. There are four sites of research at the moment: Dr. Rossi at Cornell University, Dr. Cook at Oregon State University, Dr. Yelverton at North Carolina State University and the work already mentioned at Pace Consulting.

The research data available from these sites, however, differs in its consistency. For example, Dawn dishwashing soap worked very well in the California studies, but ranked poorly in the Oregon studies. Since results vary significantly depending on site climatic conditions, this is a big stumbling block for Colorado (and other states), as there has been no work done in a climate with arid summer conditions.

Of all the control options, Dawn dishwashing soap (which is not registered) appears to be the product with the most consistent control results, and Daconil can be used as a preventive measure. New products with some promise for control are: Terracyte, Junction and a mix. That research was based on the work of researchers at Colorado and elsewhere in the United States for four reasons.

First, older snow mold fungicides such as PMAS and Calo-clor contained mercury that some think had a side effect control on moss. With those products now off the market, moss has taken root. According to Matt Nelson, cultural practices have also aided moss development. Lower cutting heights, low nitrogen fertility, and the thatch/topdressing layer all contribute to moss.

"I've never had anyone tell me that they have a moss problem on collars, tees or fairways," Nelson said. "In reality, we can't cut our greens at 3/16 of an inch, but this might solve the problem."

While greens might have excellent internal drainage, the thatch/topdressing layer at the upper surface of greens is a perfect breeding ground for moss. The development of a perched water table can also contribute to thatch development and also from using a finer sand particle size than the original construction root zone mix.

Syngenta's Matt Giese raised a fourth possibility that algae is a precursor to the development of moss. This has been indicated by some of the research done by Larry Stowell of Pace Consulting in California. That research was based on the use of chlorothalonil (Daconil) to control algae and to ultimately prevent moss development.
Mid-America Golf & Landscape: Golf Course construction projects in Midwest. Seeking experienced, construction superintendents, shapers, finishers and irrigation personnel. Qualified individuals send resume to: Mid-America Golf & Landscape, Inc., 1621 SE Summit Ave, Lee’s Summit, MO 64081-3291 or fax to (816) 524-0150.

**Vice President Operations**

Tokyo, Japan

Luxury golf management company is seeking a Vice President of Operations for our Japanese division. The successful candidate will be operationally responsible for the oversight of the practices and procedures of the Japanese golf facilities. Requirements include a mandatory 5-7 years of strong golf background in a multi-unit management capacity. Oversight of senior employees at golf facilities, managing budgeted expenses and operating procedures. This position will also be responsible for generating incremental revenue for each facility, expense control to maximize profits, development of a capital improvement program and professional development of facility personnel. Knowledge of the Japanese language, although not required, would be helpful. The position will report directly to the Senior Vice President, Japan Operations and be based in Tokyo. EOE. Qualified candidates submit resumes to: Golf Course News, c/o Vice President Operations, P.O. BOX 997, Yarmouth, ME 04096 or fax: (207) 846-0657 attn: Anna Washburn.
Due to a change in methodology, the National Golf Foundation did not have year-to-year statistics available at press time. The organization expects to have this information available soon. Golf Course News hopes to have this information available in the May issue.
For a limited time get the best for less!

Buy 3 Penn Pals™ the 4th one is Free!

Just in time for spring seeding or overseeding of greens, fairways, and tees, Tee-2-Green Corp. presents a special offer on all Penn Pals™ creeping bentgrass products—excluding Pennway and Certified Pennway blends.

Between now and June 30, 2002, when you match three Penn Pals™ varieties or blends—Penncross, Penneagle, PennLinks, Penn A-1, Penn A-2, Penn A-4, Penn G-1, Penn G-2, Penn G-6, Seaside II, Penn Trio blend, and NuPenn blend—we’ll give you your fourth choice for free! Order yours today!

---

### Mean Turfgrass Quality Ratings of Bentgrass Cultivars in the 1997 USGA/GCSAA/NTEP On-site Bentgrass Test at 13 Locations in the U.S. 2000 Data. Turfgrass Quality Ratings 1-9; 9=Ideal Turf.

<table>
<thead>
<tr>
<th>Variety Name</th>
<th>AL3</th>
<th>AZ2</th>
<th>CA4</th>
<th>CA5</th>
<th>CO2</th>
<th>IL3</th>
<th>IN1</th>
<th>KY2</th>
<th>MO4</th>
<th>NY2</th>
<th>TX1</th>
<th>VA7</th>
<th>WA5</th>
<th>MEAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>PENN A-4</td>
<td>7.3</td>
<td>7.3</td>
<td>7.2</td>
<td>7.4</td>
<td>6.1</td>
<td>7.2</td>
<td>8.1</td>
<td>7.2</td>
<td>8.1</td>
<td>7.4</td>
<td>8.7</td>
<td>6.9</td>
<td>6.9</td>
<td>6.8</td>
</tr>
<tr>
<td>PENN G-1</td>
<td>7.3</td>
<td>6.4</td>
<td>7.2</td>
<td>7.4</td>
<td>7.1</td>
<td>7.2</td>
<td>7.3</td>
<td>7.7</td>
<td>7.5</td>
<td>8.4</td>
<td>6.7</td>
<td>6.4</td>
<td>6.6</td>
<td>7.1</td>
</tr>
<tr>
<td>PENN G-6</td>
<td>6.4</td>
<td>6.3</td>
<td>7.2</td>
<td>7.4</td>
<td>7.7</td>
<td>7.6</td>
<td>6.8</td>
<td>7.1</td>
<td>7.1</td>
<td>6.6</td>
<td>6.7</td>
<td>6.6</td>
<td>6.7</td>
<td>6.7</td>
</tr>
<tr>
<td>Century</td>
<td>6.9</td>
<td>6.2</td>
<td>7.1</td>
<td>6.8</td>
<td>7.2</td>
<td>6.9</td>
<td>7.2</td>
<td>7.3</td>
<td>8.0</td>
<td>6.4</td>
<td>6.6</td>
<td>6.7</td>
<td>7.0</td>
<td></td>
</tr>
<tr>
<td>L-93</td>
<td>6.4</td>
<td>6.2</td>
<td>7.2</td>
<td>7.6</td>
<td>8.0</td>
<td>7.0</td>
<td>6.7</td>
<td>6.9</td>
<td>7.1</td>
<td>6.7</td>
<td>6.6</td>
<td>6.6</td>
<td>6.9</td>
<td></td>
</tr>
<tr>
<td>Grand Prix</td>
<td>6.8</td>
<td>6.2</td>
<td>7.3</td>
<td>7.0</td>
<td>7.3</td>
<td>6.6</td>
<td>6.5</td>
<td>6.8</td>
<td>7.0</td>
<td>8.0</td>
<td>6.5</td>
<td>6.6</td>
<td>6.9</td>
<td></td>
</tr>
<tr>
<td>Imperial</td>
<td>6.7</td>
<td>5.9</td>
<td>7.1</td>
<td>7.2</td>
<td>7.0</td>
<td>7.4</td>
<td>6.6</td>
<td>6.7</td>
<td>7.2</td>
<td>6.7</td>
<td>6.7</td>
<td>6.2</td>
<td>6.1</td>
<td></td>
</tr>
<tr>
<td>Backspin</td>
<td>6.8</td>
<td>6.6</td>
<td>7.3</td>
<td>7.1</td>
<td>7.4</td>
<td>6.7</td>
<td>6.3</td>
<td>6.8</td>
<td>7.2</td>
<td>7.1</td>
<td>6.4</td>
<td>6.3</td>
<td>6.2</td>
<td></td>
</tr>
<tr>
<td>SR 1119</td>
<td>6.5</td>
<td>6.3</td>
<td>7.0</td>
<td>7.2</td>
<td>7.4</td>
<td>6.6</td>
<td>6.5</td>
<td>6.7</td>
<td>7.2</td>
<td>6.7</td>
<td>6.7</td>
<td>6.2</td>
<td>6.1</td>
<td></td>
</tr>
<tr>
<td>SR 1020</td>
<td>6.7</td>
<td>6.2</td>
<td>7.0</td>
<td>6.8</td>
<td>7.0</td>
<td>6.4</td>
<td>6.5</td>
<td>6.6</td>
<td>6.7</td>
<td>6.5</td>
<td>6.5</td>
<td>6.4</td>
<td>6.6</td>
<td></td>
</tr>
<tr>
<td>Crenshaw</td>
<td>6.6</td>
<td>5.8</td>
<td>7.2</td>
<td>7.4</td>
<td>7.4</td>
<td>6.0</td>
<td>6.2</td>
<td>7.2</td>
<td>6.6</td>
<td>6.4</td>
<td>6.2</td>
<td>6.5</td>
<td>5.5</td>
<td></td>
</tr>
<tr>
<td>Providence</td>
<td>6.5</td>
<td>6.1</td>
<td>7.1</td>
<td>7.0</td>
<td>7.3</td>
<td>6.7</td>
<td>6.4</td>
<td>6.6</td>
<td>6.6</td>
<td>6.0</td>
<td>6.3</td>
<td>6.0</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>Cato</td>
<td>6.1</td>
<td>5.6</td>
<td>7.1</td>
<td>6.4</td>
<td>7.4</td>
<td>6.1</td>
<td>6.5</td>
<td>7.0</td>
<td>6.6</td>
<td>5.8</td>
<td>6.2</td>
<td>5.8</td>
<td>6.4</td>
<td></td>
</tr>
<tr>
<td>Viper</td>
<td>6.1</td>
<td>5.8</td>
<td>7.0</td>
<td>6.7</td>
<td>7.1</td>
<td>6.3</td>
<td>6.1</td>
<td>6.1</td>
<td>6.4</td>
<td>4.6</td>
<td>5.9</td>
<td>6.0</td>
<td>5.8</td>
<td></td>
</tr>
<tr>
<td>TrueLine</td>
<td>6.2</td>
<td>5.9</td>
<td>7.1</td>
<td>6.4</td>
<td>6.6</td>
<td>6.7</td>
<td>5.8</td>
<td>6.2</td>
<td>6.3</td>
<td>4.7</td>
<td>6.1</td>
<td>5.8</td>
<td>6.1</td>
<td></td>
</tr>
<tr>
<td>Putter</td>
<td>6.2</td>
<td>5.6</td>
<td>7.1</td>
<td>6.4</td>
<td>5.1</td>
<td>6.5</td>
<td>5.6</td>
<td>6.3</td>
<td>6.4</td>
<td>3.7</td>
<td>6.2</td>
<td>6.0</td>
<td>5.3</td>
<td></td>
</tr>
<tr>
<td>Penncross</td>
<td>5.3</td>
<td>5.3</td>
<td>6.5</td>
<td>5.8</td>
<td>4.9</td>
<td>5.8</td>
<td>5.3</td>
<td>5.4</td>
<td>5.5</td>
<td>3.3</td>
<td>5.7</td>
<td>5.1</td>
<td>4.8</td>
<td></td>
</tr>
</tbody>
</table>

| LSD Value    | 0.4 | 0.2 | 0.8 | 0.3 | 0.6 | 0.6 | 0.6 | 0.3 | 0.5 | 0.6 | 0.5 | 0.3 | 0.2 |
| C.V. (%)     | 3.6 | 12.0 | 8.0 | 13.0 | 5.4 | 5.6 | 5.2 | 3.1 | 4.8 | 5.8 | 4.5 | 3.4 | 5.4 |

1/ To determine statistical differences among entries, subtract one entry's mean from another entry's mean. Statistical differences occur when this value is larger than the corresponding LSD value (1.50 = 0.05).

2/ C.V. (Coefficient of Variation) indicates the percent variation of the mean in each column.