

FROM THE PUBLISHER



The Immigration Reform Act of 1987 is expected to take effect on June 1st. I guess we are all wondering how it will impact our business. There is no doubt that there will be some adverse affects to the horticultural industry. After all, in many regions of the country we probably employ more undocumented workers than any other industry.

We must find ways to comply with the new regulations yet still preserve our labor pool. Although it is still too early to tell exactly what the parameters will be, rest assured it will take more of our time to keep better records which will contribute to a higher cost of doing business. The immigration reform bill, which prohibits hiring new employees who are illegal aliens, was signed into law by President Reagan last November. It provides for a six-month educational period which ends the last day of May. After that the government may issue warnings, followed by fines and possible jail sentences for repeated violations by employers. Although not all of the rules and procedures are available to date, the intimidation of conditions and penalties will cause an increase in blood pressure of those employing Spanish-speaking workers. Employers are scrambling to learn the conditions and penalties of hiring alien workers.

Seminars and articles abound to make employers aware of their liability and procedures to follow in order to protect themselves from costly fines and possible jail sentences. Attorneys specializing in naturalization "are anxious to prosper by the fears and anxieties of employers and unauthorized aliens around the country." These anxieties prompt the thought of replacing the Spanish speaker as the backbone work force in the green industry around the country. It would be a shame to lose some of these "illegals." They are hard working, productive people trying to achieve more comfort and joy in their lives. There are many who are highly skilled.

More importantly, who is the future labor force, and are they willing to do the hard work that is required? How much will it cost to train this new labor force, and how long will it take them to reach a productive level? Although an amnesty program to legalize these people is part of the immigration reform bill, there will be an exodus of Spanish-speaking workers out of the United States. Many of them may qualify for amnesty but are too timid or untrusting and will not make the effort.

I believe that employers may find it worth their time and effort to help these employees obtain amnesty-and, in so doing, keep a trained and loyal employee in the job. The employer must require all employees hired after November 6, 1986, to complete and sign the verification form certifying that they are eligible for employment, even though the verification form (I-9) will not be available in final form until June 1, 1987. Employers are also advised to follow a specific policy of hiring only U.S. citizens and aliens authorized to work in the United States. On the other hand the government states that you should not discharge present employees or refuse to hire new employees based on foreign appearance or language. Kind of like talking out of both sides of your mouth.

I have been watching this bill for a number of months now. I can understand the need for the government to put a stop to the influx of people from other countries who sneak into this country, work and earn a living, use our schools, hospitals and welfare programs, yet pay no taxes. It has indeed become a burden to many communities. On the other hand, I can see why labor intensive industries need this labor pool. It is difficult, or near impossible to find laborers who are willing to do that kind of work. Either side you take, transitioning this one will be trying for all involved.

THE FRONT OFFICE

OPINION PAGE

NATURAL TURF HAS COME A LONG WAY SINCE HOUSTON



Builders of natural turf fields have come a long way since their early setback at the Houston Astrodome. They weren't prepared when a layer of paint applied to the permanent, translucent dome blocked out precious sunlight needed for the original natural field. As the turf declined for lack of light, the stadium operators made the decision to install artificial turf and set a precedent for indoor stadiums that continues today. Since then, natural turf experts have been waiting for another chance to prove themselves. They got that chance in Toronto.

It was the retractable dome that gave Toronto's natural turf fans a foot-in-the-door with the Stadium Corporation of Ontario and permitted turf experts to show how far they've come in 20 years. From the moment the stadium was proposed, both the fans and the players made it clear that they wanted natural turf to be considered. The *Toronto Star* and the Blue Jays Fan Club rallied Torontoans and put out a call for natural turf experts to present their latest technology. The call was answered and the artificial turf precedent for indoor stadiums was almost broken.

The experts had a solution for nearly every concern Stadium Corporation had. A novel method of providing artificial light to the turf when the roof was closed was revealed. State-of-the-art methods used by other stadiums to protect their fields during non-sporting events were presented. The compaction resistance of the sand-based Prescription Athletic Turf field was carefully documented. The safety advantage of a natural field was also stressed.

If natural turf was installed in Toronto, the stadium would be on the cutting edge of sports turf technology. If only there was an existing indoor facility to prove natural turf would work for both sporting and non-sporting events, the Stadium Corporation might have had the confidence to select it.

Eroding their confidence, however, was the fact that non-sporting events would be as important as sporting events in paying off the \$250 million tab for the indoor structure. The primary tenants, the Blue Jays and the Canadian football Argonauts, will occupy the facility for 97 out of nearly 200 event days. Nonsporting events, like trade shows and concerts, are expected to occupy the facility for more than 100 days. It became apparent that the dome would be open less than half the time and that made an artificial lighting system for the field necessary.

The second point of contention was that the field would have to be covered or protected as much as it was uncovered. Solutions to both problems greatly increased the cost of the natural field in comparison to an artificial surface. And, there was no guarantee it would work.

One purpose of the dome was to get away from worrying about delays and cancellations caused by the weather. They had no control over the weather and they weren't sure they could control the special devices needed for a natural field indoors either.

But, you've got to hand it to those who almost convinced them. Dr. William Daniel and Laurel Meade from Prescription Athletic Turf had the stadium officials excited about exploring the unknown like Americans were excited about the space race. Toro's Dr. Jim Watson and Steve Wightman from Denver's Mile High Stadium provided the experience and limitless confidence found in men like Warner Von Braun or John Glenn. For a while, the Toronto officials were ready to take the step into indoor natural turf.

It's just a matter of time before natural turf field builders win an indoor stadium job. For now, they'll have to be content knowing they have the advantage when the field is outdoors.

Bruce Shank

EVENTS

CALENDAR

MAY

20

North Carolina Turf & Landscape Field Day, North Carolina State University Turf Field Center, Raleigh, NC. Contact: J. M. DiPaola, NCSU, Box 7620, Raleigh, NC 27695-7620. (919) 737-2657.

JUNE

16

Northern California Turfgrass Council Field Day, Marine World Africa USA, Vallejo, CA. Contact: NCTC, P.O. Box 268, Lafayette, CA 94549.

18

Iowa Turfgrass Field Day, Horticultural Research Farm, Ames, IA. Contact: Dr. Michael Agnew, 105 Horticulture Bldg., Iowa State University, Ames, IA 50011. (515) 294-0027.

18

Turf Seed Field Day, Hubbard, OR. Contact: Tom Stanley, Turf Seed Inc., P.O. Box 250, Hubbard, OR 97032. (503) 981-9571.

24

Midwest Sports Turf Institute, College of Du Page, Glen Ellyn, IL. Contact Susan Glasgow, College of Du Page (312) 858-2800, Ext. 2770.

25

Massachusetts Turfgrass Field Day, University of Massachusetts Turfgrass Research Center, S. Deerfield, MA. Contact: R. J. Cooper, Department of Plant and Soil Sciences, Stockbridge Hall, University of Massachusetts, Amherst, MA 01003, (413) 545-2353.

JULY

22

Kansas Turfgrass Field Day, Kansas State University, Manhattan, KS. Contact: Larry Leuthold, Horticulture Dept., Waters Hall, KSU, Manhattan, KS 66506. (913) 532-6173.

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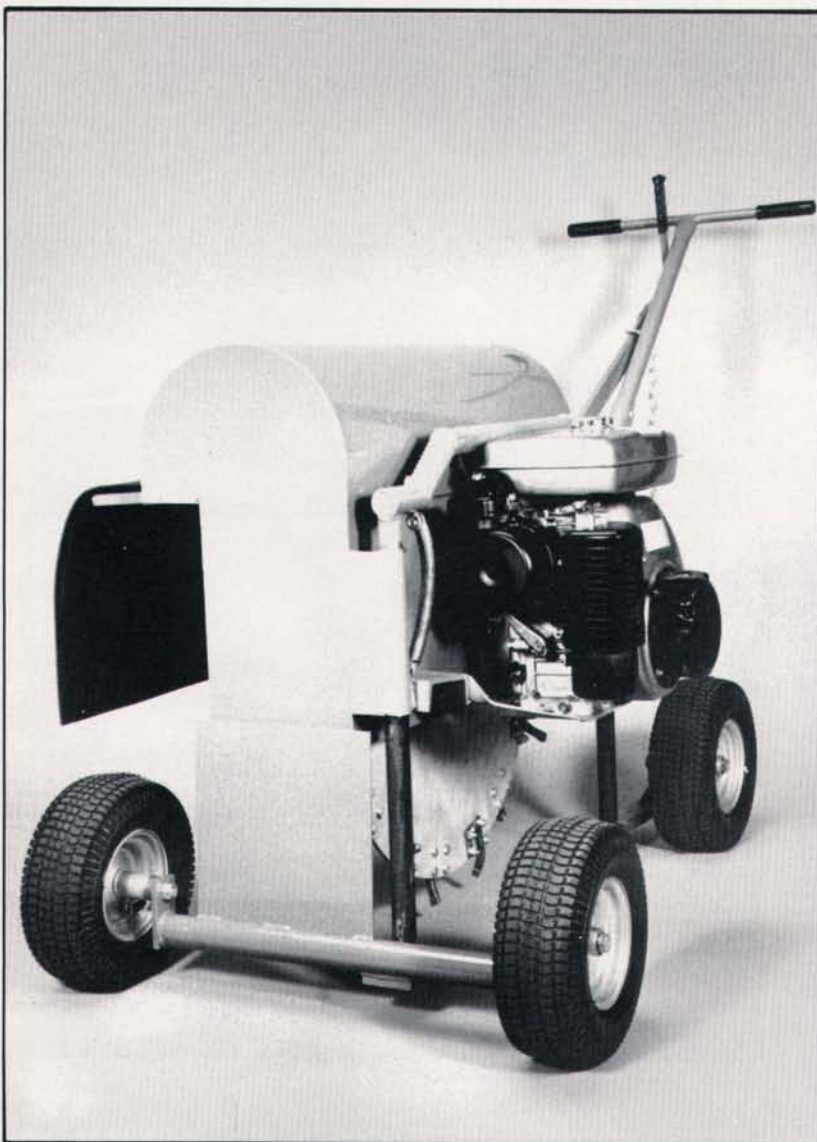
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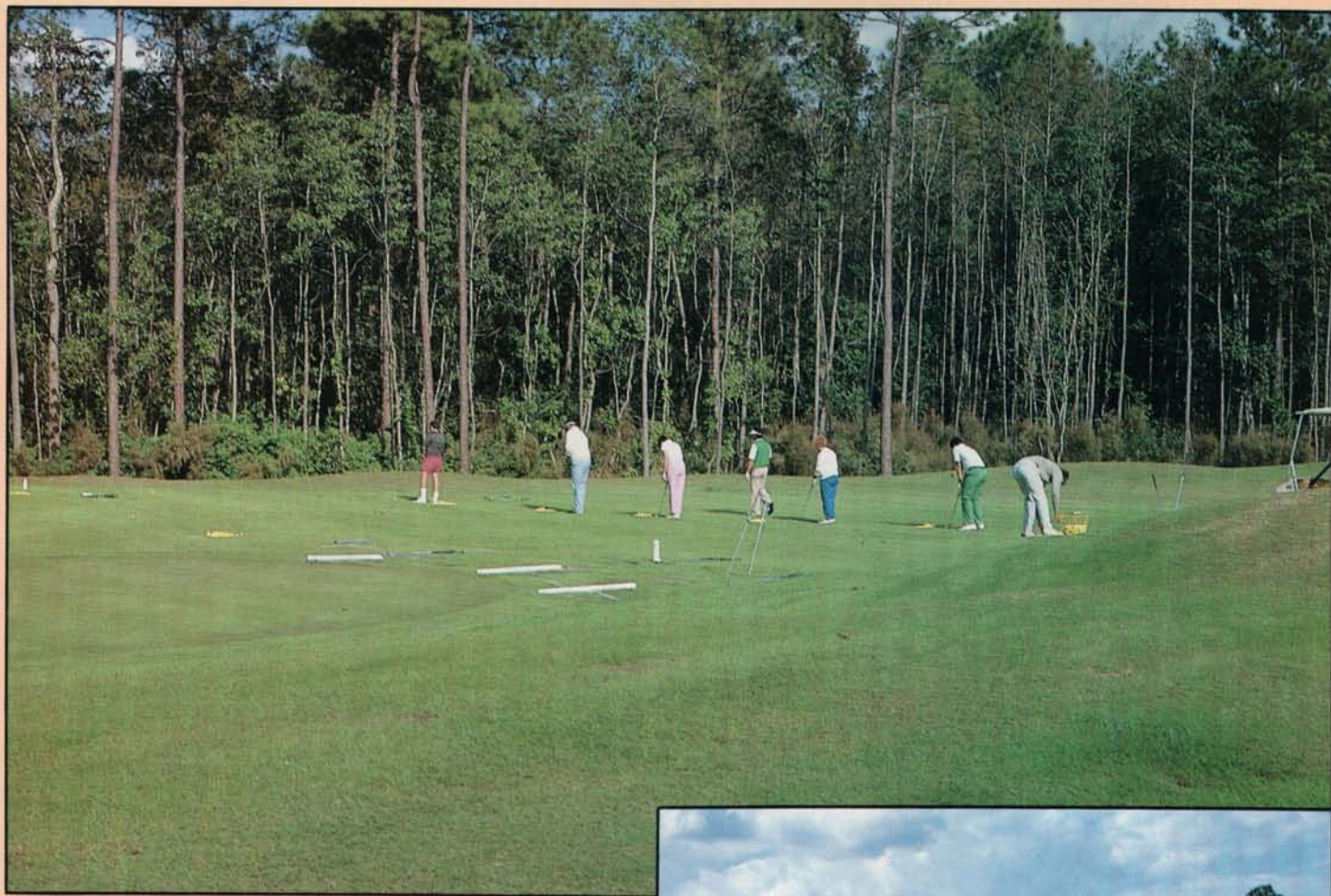
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The Evolution Of The Super-Range



The driving range has been the homely workhorse of golf—that is until a team of designers, superintendents and golf professionals decided it could be a show horse instead. Let's face it—the range is the battle zone of golfdom. Even under controlled use and regular repair, the divots from irons and woods make the driving range tee at most courses seem like a blemish rather than the potential moneymaker it is. But this might be changing.

It has taken talent, teamwork and technology to design and maintain golf's impressive new teaching tool, the "super range." Used as a centerpiece of a golf school, the "super range" draws dedicated duffers from near and far. It also can provide a beautiful "front yard" showcase for an entire course, despite the daily punishment it must take from students and others who use it for practice. The aesthetic and the monetary rewards associated with this attractive innovation can be equally as superior.

A few superintendents are beginning to appreciate the challenge of improving the driving range. Bob Farren at Pinehurst Country Club in Pinehurst, NC, Julian Hopkins at the Hills of Lakeway in Austin, TX, Tom Alex at Grand Cypress Golf Course in Orlando, FL, and Tim Gavelek at Alta Mesa Country Club in Mesa, AZ, have new respect for their driving ranges. The reason is they aren't just driving ranges, they are carefully-designed practice and teaching areas that are improving the relationship between the superintendent and the golf professional and generating important revenue to their courses.

Without taking up much more space than a large driving range, roughly ten acres, a superintendent working with the teaching pro at his course can provide the aspiring golfer with a place to use every club in his bag and practice every possible shot he may face on the course. This is done by adding features such as target greens with multiple pin placements, practice greens, practice bunkers and multiple tees. It's more work for the superintendent, but the work is more rewarding.

The result is a school area where golf professionals can teach students skills in a situation closely resembling what they will experience on the course. Computer-assisted video equipment helps the instructors analyze the student's swing and body motion. By refining the golfer's swing and having him practice a wide variety of shots over and over again in a situation much like the actual course, the instructor can do a better job. One instructor can effectively train five to seven students at a time.

Golf lessons have always been available from teaching pros at all types of courses, resort courses being no exception. The pro generally teaches the basics of driving, chipping, pitching and putting to students while trying not to disturb golfers on the course. This is not easy when there is a single practice green, an occasional driving range and a rare practice bunker—all spread out around the course. As a result, many golf instructors have inadequate facilities to provide their students with confidence in their game before they go out onto the course.

While there have been cases of superintendents working with pros to make golf training facilities more organized, it is the evolution of the range area at Pinehurst over the past seven years and the improvement of the Pinehurst concept by Jack Nicklaus in 1981 at the Hills of Lakeway that have resulted in the "super range."

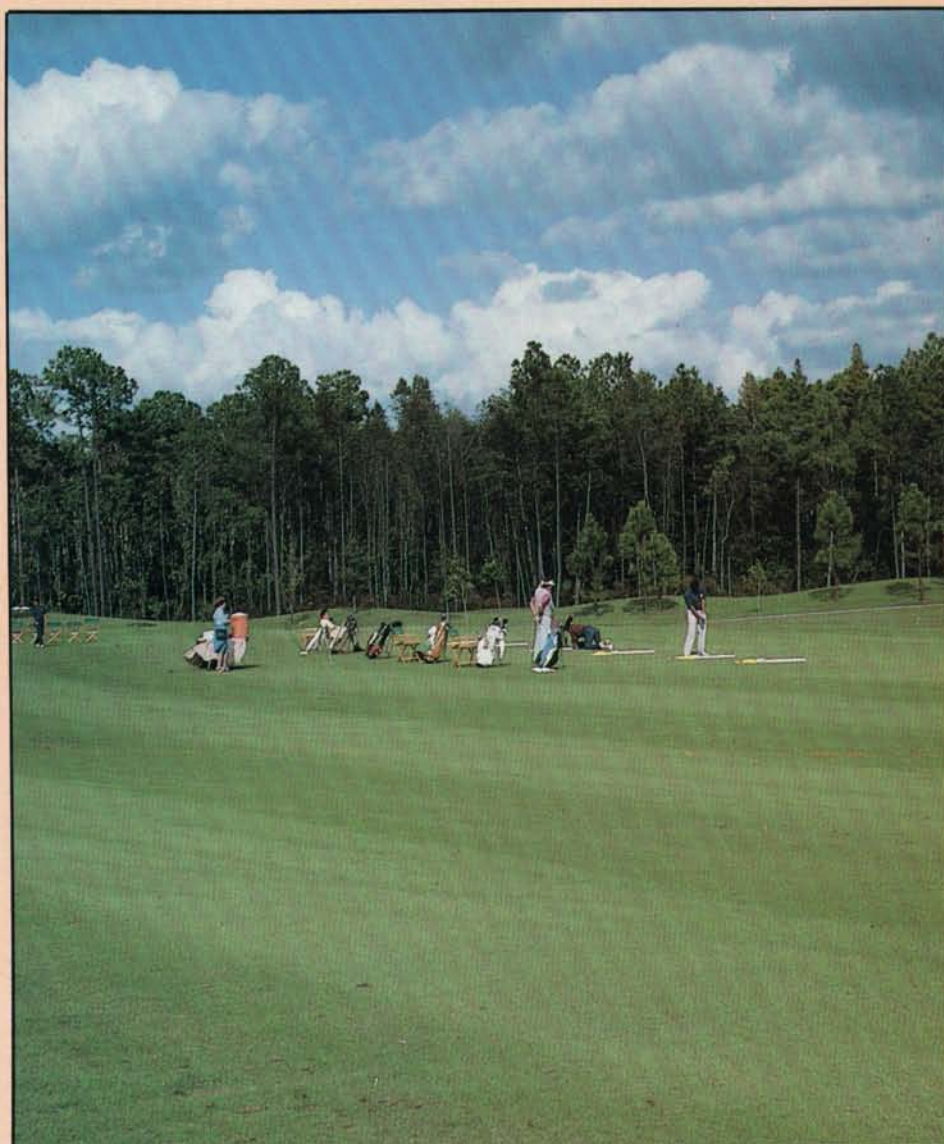
Pinehurst began offering junior golf programs in 1965 on its driving range called "Maniac Hill" by its designer, Donald Ross. The range was located next to the second of four courses designed by Ross for Pinehurst in the early 1900s and adjacent to sod nursery. Three more courses have since been built at the resort for a total of seven.

In 1979, Jack Lumpkin, director of instruction for Pinehurst, wanted to make adult training programs available. The manage-

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An instructor teaches students sand play in the large practice bunkers at the Lakeway Academy of Golf.



Large tees at both ends of the driving range at Grand Cypress enable superintendent Tom Alex to let portions of the tee recover while other portions are being used.

ment of Club Corporation that owns Pinehurst liked the concept and applied their marketing skills to create what is known today as the Golf Advantage School. They reasoned that three- to five-day schools could attract tourist golfers to the famous North Carolina resort. Tuition, ranging from \$700 to \$1,300, would include all instruction, greens fees to any of the resort's courses, lodging and an assortment of other amenities.

The decision was made to convert the range, practice green and sod nursery into a training center for the school. By removing a few trees, an eight-acre square area was available for a classroom building, the range and other practice features. The tee on one end of the 350-yard-long range and the nearby practice green remained available for golfers preparing to play any of the resort's courses. Bermudagrass target greens were added to the range. A second large tee area was constructed on the opposite end for the school. Another large bentgrass putting green was built next to the existing practice green. In the remaining space two chipping greens were installed and surrounded by two practice bunkers. Each chipping green has three different pin placements. Finally, the area around the chipping greens and bunkers was graded to provide an assortment of uphill and downhill lies.

Today the school area is used for more than 50 classes every year says Ken Crow, director of the Advantage Schools. Each of five instructors works with no more than six students at a time. While one instructor teaches his group pitching and sand play, other instructors work with their students on chipping, putting, driving and developing an effective swing. Each group has three intensive two-hour sessions each day. When the last class ends at 3 p.m., the instructors take four students out onto the Number Two course to help them apply what they have learned that day.

"You can imagine how much repair work there is to complete before the following morning," says Crow. The task falls into the capable hands of superintendent Bob Farren, Crow's brother-in-law. Farren is responsible for the school area, general landscaping around the clubhouse and the Number Two course. Farren and three other superintendents report to Brad Kocher, chief superintendent for all of Pinehurst's seven courses.

"Teamwork is critical to keeping classes on time and the school area in top condition. When the students arrive for class early each morning, everything has to be ready. That means Bob has to schedule most maintenance for the evening and early morning. Once classes start, distractions are kept to a minimum."

"We do 90 percent of the maintenance in the evening," explains Farren. "First we sweep up the divots and broken tees with a Parker Sweeper. The divot holes are filled

with sandy soil mixed with perennial ryegrass seed. This takes nearly 40 hours each week because there is more than an acre of tees and 20,000 square feet of chipping area." The range and chipping areas are mowed every other day after all divots are repaired.

Every morning before the students arrive, the greens are mowed and the bunkers are raked. The tees are mowed every other morning. "First impressions are very important for the student or the golfer using the practice area," says Crow. "A beat-up driving range is a poor introduction to a golf course. The entire area is overseeded in late summer just as the courses are."



The practice greens at Lakeway are walk-mowed each morning before classes begin.

"Everything we do for the golf courses we do for the golf school," says Farren. "The irrigation system was upgraded and expanded when the changes were made in 1980. We aerify the course, like we aerify the fairways, four times each year. In some ways the school receives more care than the course. It needs more fertilizer, topdressing and overseeding. The divot work is almost a full-time job for one person."

Crow is in the process of breaking out the cost of maintaining the school area from the golf course. Club Corporation is evaluating the Advantage School program for other resort courses it owns. "We are seriously looking to improve the range areas of five or more courses at the present time," says Crow. "Bob is providing us with the maintenance cost information so we can make a practical decision about the profitability of golf schools at other locations. So far, our figures show the revenue produced by the school is easily worth the cost of additional maintenance for the range area."

A former Advantage School instructor, Mike Labeau, took the "super-range" concept to Arizona three years ago when he accepted the golf pro position at Alta Mesa Country Club, in Mesa, AZ. The course is private except for the Pinehurst-like range area. It is superintendent Tim Gavelek's second experience with an improved range. "The range at Ventana Canyon in Tucson, where I used to work, has tees on both ends

of the range," Gavelek said. "When I came to Alta Mesa, the range really impressed me. It shows a range can be more valuable to a course than previously thought."

LaBeau can work with students who are not members of the club without leaving the course. The range generates a profit in addition to a reputation as the best practice range in the Phoenix area. Gavelek assigns one member of his crew just to the range. In the winter, Gavelek oversees the target greens but not the range. "Golfers pay more attention to accuracy and worry less about distance," says Gavelek. "You see fewer golfers lifting up big hunks of turf trying to hit the ball 250 yards."

Both teaching professionals and superintendents seem to agree that Jack Nicklaus took the "super-range" concept and perfected it at the Hills of Lakeway in 1981 and Grand Cypress in 1983. In both cases, the developers hired Nicklaus to design a golf course and a golf academy. He had been impressed by the school at Pinehurst but thought it lacked one primary feature, practice holes. So he included three full-length practice holes to the range configuration, one par 3, one par 4 and a par 5. Each of the holes has five different tees, three different pin placements on each green, fairway bunkers, uneven lie mounds, and rough of varying heights of cut. Nicklaus gave instructors everything they could possibly want, including computerized videotape equipment that analyzes a golfer's swing.

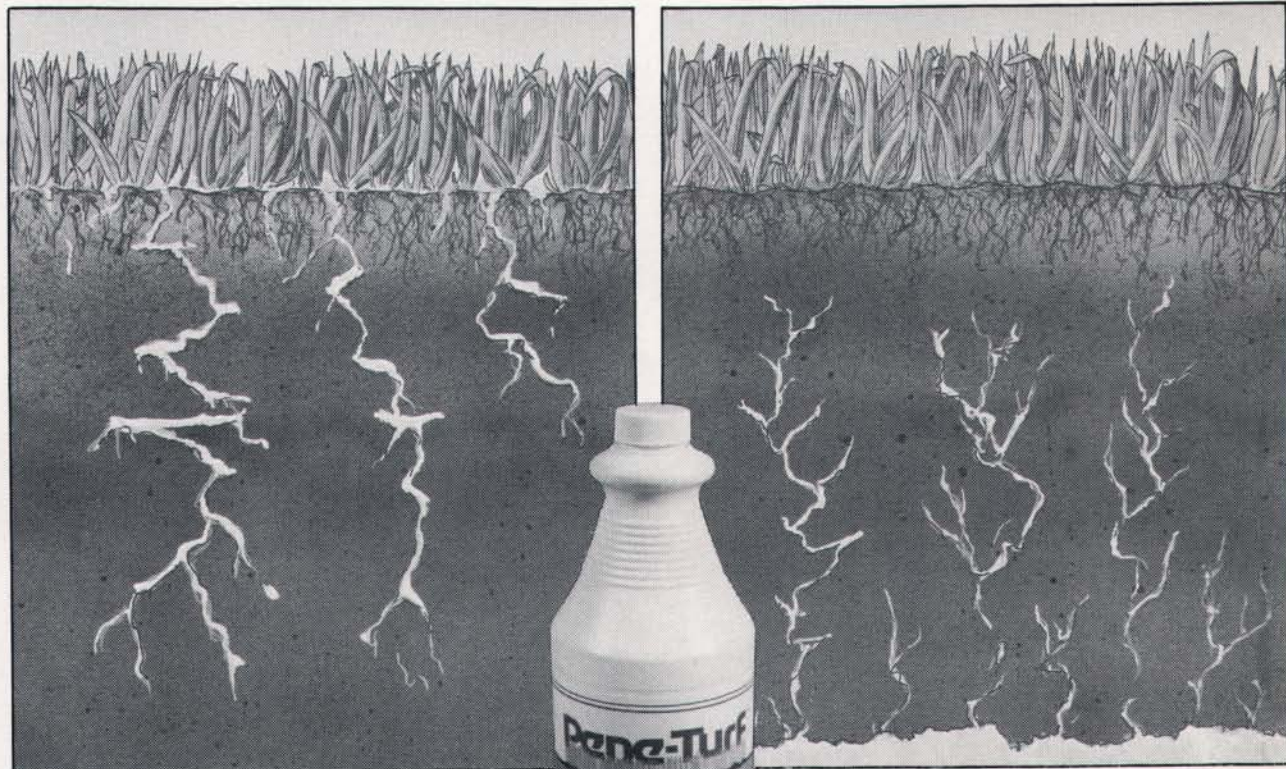
When Nicklaus designed his version of the "super range," he consulted with Ed Etchells, his supervisor of golf course maintenance at Golf Turf, the maintenance division of Golden Bear. He knew the beating the academy turf would take. He also knew there were two ways to control turf wear. The first was to design the academies with enough tee area to distribute the traffic. The other was to have Etchells and his agronomist, Steve Batten, put together a recommended maintenance program that would accelerate the recovery of the turf.

The superintendents at the academies have followed these recommendations since the courses and the academies opened. Julian Hopkins at the Hills of Lakeway has the larger of the two academy areas, 15 acres. Despite the poor Texas economy, Clayton Cole, director of the Academy of Golf, has not cut back the maintenance budget. In addition to revenue from 42 school sessions each year, the academy holds clinics every year for the Southern Texas PGA and corporations. There are three types of personal memberships it sells to individual golfers each year ranging in price from \$125 to \$745. Members can polish their skills at the academy anytime classes are not being held. The adjacent 18-hole Hills is private.

The 7,500 square-foot practice putting green and the three practice hole greens are bentgrass, very unusual for golf greens in Texas. Hopkins cuts the tournament-fast greens at 1/8 inch with a walking greens

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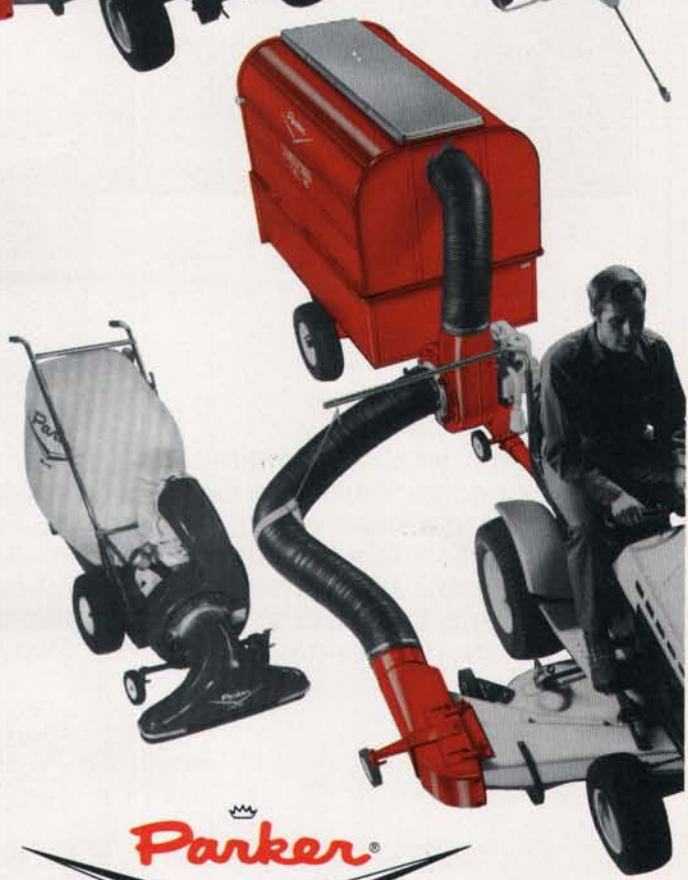
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*Patent applied for

Super-Range

continued from page 16

mower. The two pitching greens are Tifgreen bermudagrass mowed at 5/32 inch. The fairways, range, tees, six target greens and the roughs are Tifway bermudagrass. All bermudagrass is overseeded with perennial ryegrass in the fall. "There are five different heights of cut for the turf at the academy," states Hopkins. "We even mow the driving range at 7/16 inch, the recommended height of fairways for PGA tournaments."

Hopkins is extremely cautious with his fertilizer program. Most nitrogen is in a slow release form, either sulfur-coated urea or methylene urea from Scotts. Potassium levels are checked regularly to make sure roots have the nutrients they need to withstand traffic stress. The tees are given an extra pound of nitrogen each month in the form of ammonium sulfate. Hopkins uses sulfur coated urea and ammonium sulfate to counteract alkaline soil conditions.

Located 150 miles from the Gulf of Mexico, Austin is characteristically hot and humid from May through October. Hopkins is on constant watch for brown patch and *Pythium* during this period and applies fungicides weekly. He uses primarily wettable powders, alternating fungicides frequently to avoid problems with resistance. In the late fall and spring, his attention shifts over to leaf spot and dollar spot.

To assure turf hardiness, he regularly applies potassium in his fertilizer program and puts down an ounce of iron in the form of ferrous sulfate every two weeks. All chemicals are applied to the greens with a walk-behind spray boom. No vehicles or riding greensmowers are allowed on the putting greens.

The irrigation system at the academy provides an unusual amount of control over moisture. Each green is a single station on the hydraulic Toro system. Three central controllers allow a separate station for every two irrigation heads on the fairways and driving range. Hopkins irrigates the bermudagrass from sundown to 5 a.m. and the bentgrass greens between then and sunup.

Besides aerating the tees and greens three times each year, Hopkin's crew topdresses the tees with sand every week and sometimes twice a week. During the winter, ryegrass seed is mixed with the sand. Most of this work is done on Mondays when the academy is closed. "That one day is very important to the maintenance program," says Hopkins. "It gives us a chance to catch up on repair work and gives the turf a well-deserved day of rest. It's also the day we apply all pesticides."

"The academy is not a second sister to the golf course when it comes to maintenance," says Hopkins. "When I budget for the course, I also budget for the academy." The academy shares equipment with the golf course. The only special maintenance equipment needed for the academy are sweepers to pick up the divots and a ball retriever for the range.

When the academy was new, three people

of the 18-member maintenance crew for the Hills of Lakeway spent the majority of their time working at the academy. After six years of experience keeping the academy in top shape, Hopkins now assigns only one crewmember to the academy on a full-time basis. "If he needs help, I can call one or two guys over from the golf course for a few hours," states Hopkins. "Part of the trick is scheduling jobs like aeration, topdressing and applying pesticide so one crew can do both the course and the academy on the same day."



Lakeway superintendent Julian Hopkins keeps a close watch on nutrient levels on the bentgrass greens.

Nicklaus changed very little when he designed the Academy of Golf at Grand Cypress Resort in Orlando. It has all the features of Lakeway plus a lake on the par five practice hole. The greens are Tifdwarf bermudagrass instead of the bentgrass at Lakeway.

Superintendent Tom Alex is responsible for the academy and the 27-hole Grand Cypress Golf Course. Alex is used to challenges because he came to Grand Cypress from the Tournament Players' Club in Jacksonville, FL, the notorious course designed by Pete Dye. The experience at TPC has been valuable to Alex since Nicklaus designed Grand Cypress in the Scottish tradition with steep bunkers and heavily-mounded fairways.

It's not the fact that Alex has a 27-hole, maintenance-intensive course to maintain on top of the academy that causes him the most concern, it is the limited amount of time he has to run equipment. "We're trying not to put lights on some of our equipment, but we may end up doing that," Alex confesses. During three- and five-day schools, his crew must complete all major work between four in the afternoon and eight the next morning.

From September to May, schools are virtually back-to-back, with only an occasional

one-day break in between. "The hardest time is during transition when we oversee the entire academy with perennial ryegrass," says Alex. "The fall is a bad time for insects and diseases in Orlando. They make overseeding that much harder, especially when you have to live up to the quality golfers expect from a Nicklaus course." Like Hopkins, Alex is very careful about fertilization and irrigation to avoid problems with diseases. "We can't push the ryegrass too much, even on the tees." He also maintains a close watch for sod webworms and treats regularly with Proxol and Dursban.

As the academy grows in popularity and Grand Cypress opens a fourth nine at the golf course, Alex's work will grow. "It's staggering to think about the amount of work that has to be done, but the success of the academy makes it worthwhile," Alex reflects. "We must be doing something right because ten more courses in the area are planning to expand their ranges into school areas."

In Clearwater, just 90 miles from Cypress Gardens, the Professional Golf Association Tour has opened its version of the "super-range" called the Family Golf Center. The facility centers around a driving range and two miniature golf courses on 22 acres. Within the range area are nine target greens, each averaging 4,000 square feet, bordered by bunkers. The ninth green is a recreation of the 17th green at the Tournament Players Club at Sawgrass surrounded with sand instead of water.

More than two acres of bermudagrass/ryegrass tees are divided into two tiers to accommodate more than 120 golfers at a time. On the side of the range are practice bunkers. A unique series of lights positioned on poles behind the tees and on the surface out on the range illuminate the Family Golf Center for night practice. Two PGA teaching professionals and three apprentice instructors hold group and individual lessons seven days a week. Even the miniature golf courses are not the windmill variety. They are designed to provide the same roll and angle putts found on golf courses.

"We hope private investors and municipalities will provide the land and capital to build Family Golf Centers in major metropolitan areas across the country," says Rick Evans, vice president of the PGA Tour. The goals, according to Evans, are to provide a facility for the public to learn the game of golf and to offer a convenient facility for golfers to practice. Five more Family Golf Centers are in the planning stage, including one in Scottsdale, AZ, and one in Arlington, TX. Evans believes more than 100 of the centers will be built in the next ten years.

The driving range, once an unpleasant necessity for some golf courses and their superintendents, is evolving to better serve the needs of today's busy golfers. At the same time, it is producing new revenues for all types of golf courses. By working with the golf professional and golf course designer, the superintendent is providing his employer not only with quality turf, but with greater financial stability. ☺

ATLANTA BRAVES PLAY OPENER ON NEW FIELD



Temperatures were in the 20s when the PAT field at Atlanta Stadium was completed. Celebrating the finished job are (left to right) Tim Bowyer, Steve Gibson, Ferrell Sellers, Turner Gibson, Bill Daniel and Sam Newpher.

Three weeks before the Atlanta Braves' April home opener, a new Prescription Athletic Turf (PAT) field was dedicated at Atlanta/Fulton County Stadium in Atlanta, GA, as one part of a state-financed \$18 million stadium renovation program. The field was installed in 12 weeks at a cost of more than \$700,000 by Southern Turf Nurseries of Norcross, GA.

The PAT field is similar to the fields at Mile High Stadium in Denver, CO, and the Orange Bowl in Miami, FL. A patented drainage system in the field can remove the equivalent of three inches of rainfall per hour. Fulton County Stadium has the largest PAT field yet installed and the only one being utilized for both professional baseball and professional football.

More than 900 truckloads of soil were removed from the stadium in January to create a 12-inch-deep depression. After lining the area with plastic, a network of drainage and irrigation lines was installed. The pipes were then covered with 5,000 yards of sand. A three-inch layer of calcined clay (Terra-Green) was placed on top of the sand and graded to provide a four-inch crown instead of the three-foot crown needed previously to drain the field. The subsurface drainage system is connected to two pumps underneath the stadium so that water can be pumped out of or into the field.

Six pairs of moisture-sensing probes were statistically located in the root zone before thin-cut sod of Tifway 419 and perennial ryegrass was laid over the 2.6 acres. On March 17, 35 new Toro sprinkler heads were installed, the field was rolled and topdressed with sand. Since temperatures were only in the mid-20s, the decision was made to cover the entire field with a protective blanket to help the sod knit before the home opener three weeks later.

Sam Newpher, grounds manager for the Atlanta Braves, said the players liked the field immediately even though two or three small patches of sod were torn up during the opener on April 7. "Players in the dugouts noticed right away that they could see the whole field," said Newpher. "They didn't have to look over that three-foot crown anymore." "Everyone at the stadium is committed to making this the best field in profession-

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