

themselves and their facilities to be in Houston next January.

Stephen T. Cockerham, President

ANNUAL CONFERENCE PROGRAM PACKED WITH VALUABLE INFORMATION

The program for the 1990 STMA Annual Conference and Trade Show has been finalized and includes a wide range of topics, from the mechanics of seeding to budget writing. Those who attend the conference in Houston, TX, January 19-21, will fill more than one notebook with valuable information. The theme of the conference is "Sports Turf: Heart of America in the 1990s."

The conference opens Friday, January 19 at 9:30 a.m. with a keynote address by Dr. James Watson, vice president and chief agronomist for The Toro Company, Minneapolis, MN. Watson, whose experience ranges from being a turf consultant for the National Football League to determining the need for specialized products for the sports turf industry, will document the industry's growing importance.

The general session will continue with speeches on two critical issues. Dr. James Beard of Texas A&M will address the topic of "Handling the Use and Play Intensity on Sports Turf." Dr. Henry Indyk of Rutgers University will follow with his remarks, "Who Is Passing the Bucks?" The morning ends with the annual STMA business meeting.

The afternoon offers two concurrent, information-packed sessions. Both sessions will cover six topics in 30-minute segments.

Dr. Gil Landry of the University of Georgia kicks off the first session with a discussion of soils. Indyk follows with his recommendations for nutrition of sports turfgrasses. Cal Poly Pomona's Mark Hodnick will then describe his experiences with water management and automation. Compaction relief is the next subject, addressed by Dr. A. J. Powell of the University of Kentucky. Turfgrass breeder Dr. William Meyer of Turf Seed, Inc., will then present his advice on what to look for when buying seed. The session concludes with a discussion on the mechanics of seeding.

The other concurrent session begins with international turf expert John Souter of Scotland speaking on the use of sand in new construction. Dr. Kent Kurtz expands the subject of sand with his address on its use for existing fields.

Beard then describes results of field construction using mesh elements. Scheduling maintenance around events will be the topic of Steve Wightman of Jack Murphy/San Diego Stadium. STMA President Stephen Cockerham will report on his research on traffic tolerance of cool season grasses at the University of California, Riverside. David Frey, property manager for Stadium Corporation in Cleveland, OH, will keep turf managers alert with his speech on crisis sports turf management.

The trade show opens Friday evening with a reception on the exhibit floor. It will continue the following morning with both inside and outside exhibits and demonstrations. Show hours on Saturday are from 9 a.m. to 3 p.m. A Texas Style Barbeque lunch will be provided at noon. The trade show closes on Saturday afternoon.

Early risers can take advantage of a workshop on Saturday morning. It focuses mainly on the needs and special problems of managing sports turf at parks and universities. Jim Long of the College of Holy Cross and Twyla Hansen of Nebraska Wesleyan University will share their

experiences on university campuses. Roger Mellendorf of Green River (NE) Parks and Recreation Department and Mike Schiller with Glenview (IL) Parks Department will do the same for parks-related problems.

Saturday night will feature the annual STMA awards banquet, during which STMA scholarships and the Baseball Diamond of the Year Award will be presented.

Two more workshops will be offered Sunday morning before showgoers head home. Harry Gill of Milwaukee County Stadium and Irv Clark, with the City of North Platte, NE, will hold a budget writing workshop. Kurtz concludes the conference with a workshop entitled "New Ideas in Tackling Old Problems."

"You don't have to be a member of STMA or from Texas to take advantage of this excellent program," explains Cockerham. "It is a tremendous educational opportunity for all turfgrass managers."

TIME TO ENTER 1989 BASEBALL DIAMOND CONTEST

Start taking pictures and preparing your entries for the 1989 Baseball Diamond of the Year Award. This is the fourth year for the awards, which recognize efforts in promoting excellence in the management and appearance of baseball diamonds.

The contest is co-sponsored by the STMA, Beam Clay/Partac, and sportsTURF magazine. Entries will be judged by a carefully selected panel of judges. They will select a winner in each of three categories: professional diamonds; college and university diamonds; and diamonds at schools, parks, and municipal sports complexes. Locate the entry form in this issue for the contest and start preparing your entry.

This year special attention has been given to selection of the judges. They are all Major League head groundkeepers: Harry Gill of the Milwaukee Brewers, Pete Flynn from the New York Mets, Jim Anglea of the Texas Rangers and Steve Wightman with the San Diego Padres. They will base their decision completely on the information and illustrations you provide.

The awards will be presented at a special banquet held during the 1990 STMA Annual Conference and Trade Show, in Houston, TX. The deadline for entries is October 31, 1989. So get your camera out and start taking pictures now!

CATCH THE ACTION

Mark your calendar!

June 21 - Midwest Sports Turf Institute
Harper College, Palatine, IL.

September 26 - Northeastern Sports Turf Institute
College of Holy Cross, Worcester, MA.

**January 19-21, 1990 -
Annual Conference and Trade Show**
Wyndham Greenspoint Hotel, Houston, TX.



**400 N. Mountain Ave., Suite 301, Upland, CA 91786
(714) 981-9199**

REBOUND

LETTERS FROM READERS

QUALITY IS WORTH MORE

The letter in Rebound from Dr. Kent Kurtz, professor of horticulture at Cal Poly, Pomona, prompted me to respond.

His statements mustered great empathy. We do need more well-qualified people in the turf and landscape industry, however,

his comparison with other competing positions who can begin at \$30,000 per year spells the "dirt-deep, gut grinding" truth.

I have worked in all facets of this "diamond in the rough" for over 40 years and can assure Professor Kurtz and the industry that no amount of missionary work will overcome with any impact until the rewards

(in the main-cash) exceed the expenditures of the alternatives.

As an employer, unless your four years of college can make it so that you can produce for me more profit — per dollar of cost — than can the laborer who I can train in two weeks to do 90 percent of that needed, I can not afford to pay you the \$10 to \$15 per hour to tempt you to this industry.

What we need is to sell the public that quality is worth more, and to find ways to make professionals more productive in the areas that our customers are will to pay.

I have hired workers with bachelor's, master's, and even a doctorate degrees, and had them shoveling snow and mowing lawns, etc. Doing this they were worth no more than the high school dropout who walked faster, worked harder, and complained less. He was happy to have a job. Most of the others (with one or two exceptions) were frustrated and justifiably never satisfied.

People fight to get into law school and medical school. I would project that with over 75 percent of these students that cash and status rewards are primary motivators.

Until we can give them the same, we can not expect the interest and rush to participate to materialize.

David E. Lofgren, Director
Institute of Maintenance Research
Salt Lake City, UT

YOU COULD BE HONORED BY
THE PROS!

THE BEAM CLAY® BASEBALL DIAMOND OF THE YEAR AWARDS

The judges for the 1989-1990 Beam Clay® Baseball Diamond of the Year Awards will be four head groundskeepers representing each of the major league divisions:

AL-East
Harry Gill, Milwaukee Brewers

NL-East
Pete Flynn, N.Y. Mets

AL-West
Jim Anglea, Texas Rangers

NL-West
Steve Wightman, San Diego Padres

Winners will be honored at the annual Sports Turf Manager's Association Awards Banquet and be featured in sportsTURF Magazine. No entry fee is required. So, if you're proud of your baseball facility, why not enter your baseball field in the Beam Clay® Baseball Diamond of the Year Awards contest?

The Awards are sponsored by Beam Clay®, The Sports Turf Managers Association, and sportsTURF magazine in recognition of excellence and professionalism in maintaining outstanding, safe, professional quality baseball diamonds. Entries will be judged in three categories: professional diamonds, college diamonds; and school, municipal or park diamonds.

Send the information below to enter:

1. Age of baseball diamond (year of installation).
2. Geographic location (city and state).
3. Description of maintenance program for turf and skinned areas.
4. Operating budget for baseball diamond.
5. Irrigation: None Manual Automatic
6. Total number of maintenance staff for field.
7. Does baseball field have lighting for night games?
8. Number of events on baseball diamond per year.
9. Types and number of events on diamond other than baseball?
10. How many months during the year is the field used?
11. Why you think this field is one of the best?
12. Send two sets of color slides or prints.

Deadline for entries: Entries must be postmarked no later than October 31, 1989.

Mail entries to:
Beam Clay Awards
Kelsey Park
Great Meadows, N.J.
07838



sportsTURF
magazine

SLOW PLAY, CART PATHS

Fifty years ago, it took about 2 1/2 hours to play a round of golf. A round taking over three hours was considered the work of tortoises.

Today rounds of five hours or more are commonplace. One cause is the widespread use of cart paths which weave all over the course.

Much can be done to correct this situation in ways that will increase our enjoyment of the game, make courses more attractive, and ease some course maintenance problems.

Paving materials are now available which allow the grass to grow through and protect turf from cart traffic. Some are designed so golf balls take a normal bounce and not the erratic bounce which occurs when golf balls land on asphalt or concrete.

By using these new materials, grassed cart paths can now go down the middle of the fairway and near the green on the side closest to the following tee. This will speed up play without changing the nature of the game.

Ed Roach, President
Golf 2000 Inc. San Diego, CA

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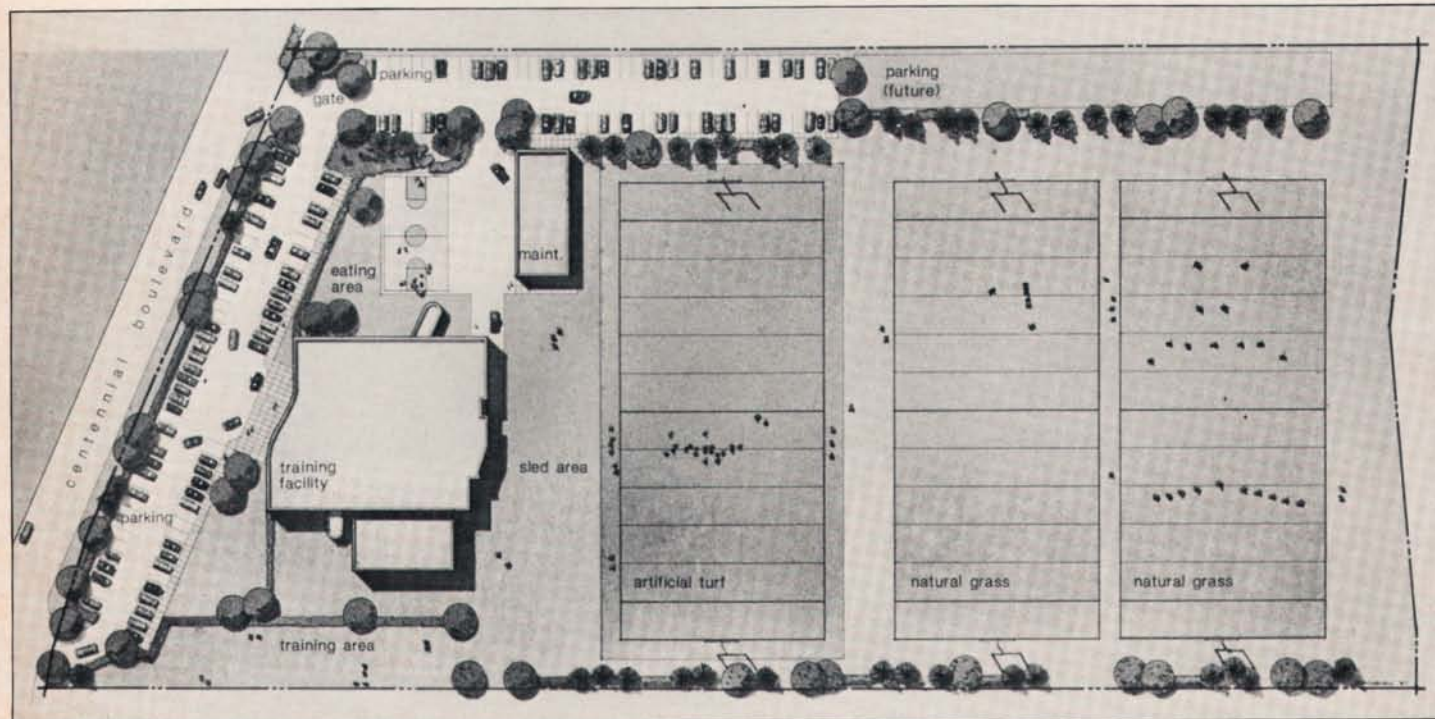
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June, 1989

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Forty Niners Set New Standard For NFL Training Centers



Layout of Marie P. DeBartolo Sports Centre. Photo courtesy: HOK Sports Facilities Group.

When a National Football League franchise wins one Super Bowl, competitors try to discover what its winning formula is. They look hardest at players, coaching and the play book. When the same team wins two Super Bowls, the formula becomes the subject of intensive analysis throughout the league.

When the San Francisco Forty Niners won its third Super Bowl of the 1980s, the world of professional football wanted to know everything about the organization, from the flavor of its PowerBurst drink to the type of drills it puts players through.

One of the most notable changes at the Forty Niners' camp last summer was its new training facility. The team worked out for the first time at the 11-acre Marie P. DeBartolo Sports Centre, in Santa Clara, CA. Edward J. DeBartolo, Jr., who purchased the team in 1977, named the complex as a tribute to his mother.

DeBartolo wanted to show his players and his coaching staff that he intended to field the best team on the best fields. For years the Forty Niners had trained on two 60-yard fields in Redwood City, CA, one natural and one artificial. The old complex just didn't fit the needs or the image of a team that was becoming a dynasty. He immediately began to explore building a complete professional training center, one that met the standards of the Youngstown, OH, based DeBartolo Corporation, a developer of upscale shopping centers and real estate developments.

When the city of Santa Clara got wind of his plans, it approached DeBartolo about developing a 11.2-acre site across the road from the new Great America Theme Park, Santa Clara Convention Center, Santa Clara Golf Course and Doubletree hotel.

"We explored building a new facility in Redwood City," recalls Norb Hecker, execu-

tive administrator of the center, "but the Santa Clara site gave us the chance to expand our thinking further. It gave us room for three fields instead of two, with plenty to spare for the headquarters and training center." Hecker is also executive assistant to Coach Bill Walsh and was a former assistant to Green Bay Packer legend Vince Lombardi.

DeBartolo spared no expense during design and construction of what has become a model for professional football training centers. He wanted an architect experienced in professional sports, one familiar with the details required, from the weight room to the surface of the fields. He chose HOK Sports Facilities Group in Kansas City, MO, designer of major stadiums and training facilities for both baseball and football.

HOK's Joel Leider worked with Lou Zarlenga, head of engineering for the

DeBartolo Corporation, to put together specifications for the training center. They included a two-story main building, a maintenance building, one artificial turf field and two natural turf fields. The main building houses the executive offices, a swimming pool, audio/visual center, cafeteria, weight room and lockers. In addition to large maintenance and storage areas, the second building includes two racquetball courts.

As construction began on the buildings, HOK turned its attention to the fields. It was clear from the beginning that there were two major factors in selection of field surfaces: water and player safety. Every effort had to be made to conserve water throughout the year and to reduce the number of injuries during training. Drainage was not a serious concern, since the area averages less than 18 inches of rainfall per year.

HOK had heard favorable reports about the surfaces at the Seattle Seahawks training complex in Kirkland, WA. The natural turf fields there are sand-based, designed by Dr. Roy Goss, extension agronomist for Washington State University. The Seahawks also installed one field of Omniturf, a carpet of artificial turf topped with sand.

Leider contacted Dr. Bill Daniel, co-inventor of the Prescription Athletic Turf (PAT) System, as a knowledgeable source on sand field construction. Daniel and partner Laurel Meade developed a proposal for a PAT System for the Forty Niners. The idea was to conserve water by subirrigating. The patented system automatically controls both drainage and subirrigation and utilizes vacuum to keep a field in play regardless of rainfall.

When the Forty Niners questioned whether the Santa Clara weather called for such an advanced drainage system, an alternative was suggested. In 1966, Purdue University researchers developed a sand-based system for golf greens. It was given the name Purr-wick, which stands for plastic under reservoir rootzone with wick action. This predecessor to the PAT system has some of its benefits but is totally manual and does not include a vacuum system. However, the system had never been used before for an athletic field.

"The key features of Purr-wick," explains Daniel, "are water conservation and a uniform moisture content. By controlling

drainage with a plastic barrier and valves, you conserve water in the root zone. Water will wick up in properly sized sand as much as 14 inches in 24 hours. The wicking action starts out rapidly, moving the first eight inches in 20 minutes, then slows."

At the time, Jim Eagle, a licensed PAT installer from Fort Worth, TX, was preparing for a large park project in Carson, a southern suburb of Los Angeles. "Since I would have my equipment and crew in the state," he recalls, "we could move up to the Forty Niners' training center after completing our work on Del Amo Park." The timing was right for Eagle and the Forty Niners. With 18 months to go before the opening, Eagle started making arrangements.

"I really enjoyed working with the Forty Niner organization," Eagle says. "They reminded me of the old Dallas Cowboys. They are totally dedicated to being a winning team and it shows in the way they do everything."

The first order of business was to find a source for more than 12,000 tons of dune sand and 22,000 yards of sod grown on sand. "The sand in the field had to match the sand on the sod," Eagle states. "We found a beautiful type of beach sand near

Pebble Beach. Then I started calling sod farms to see if they had sand fields where they could grow Kentucky bluegrass sod *without netting* in a year's time."

Steve Stone, from Warren's Turf Nursery in Suisun, CA, was able to satisfy Eagle's needs by custom growing a blend of four Kentucky bluegrasses at the company's farm in Manteca, CA. The four bluegrasses were Warren's own proprietary cultivars Able 1, A-34, H-7 and I-13. The fields at the Manteca farm were almost pure sand. "I was trying to avoid the problem of washing the sod before it was installed," Eagle explains.

Eagle's crew moved on site January 4, 1988 to direct excavation. The top 14 inches of soil was removed from more than 4½ acres. With the help of lasers, a flat subgrade was obtained for the entire square area. "There is not more than 1/2 inch difference in elevation in either the subgrade or the final surface," remarks Eagle.

A Purr-wick field must be flat to work properly. When it is used for golf greens, the root zone must be partitioned into sections for each six inches of grade change. If this is not done, water will move by gravity

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Genoff drags field after practices to stand turf erect before mowing.

"There's a difference between rooting and anchoring and between soil and sand. It takes months for the roots to knit together to form a tough base."

Forty Niners

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to the lowest point, destroying the uniformity of the wicking action. A crowned athletic field would require the same type of partitioning as a golf green.

The next step was to cut shallow trenches in the subgrade for the network of perforated drain pipe. The network consists of a series of two-inch slitted tubes feeding into four-inch collector drains. Once installed, the collector drains lead to three gate valves which open to allow water out of the field or close to retain it.

Since Eagle was going to install large valve-in-head sprinklers with swing joints, he also had to provide holes in the subgrade at each head location and trenches for the irrigation mains and laterals. The Forty Niners wanted no sprinkler heads on the playing surface of the two fields. However, three heads are located between the two fields within the area of the Purr-wick system. All other heads are located on a loop outside the fields.

Everything had to be installed above the plastic barrier to assure a closed system. Once all the trenches and holes were dug, the barrier was installed to line the entire bottom and sides of the huge bathtub. "Imagine what an entire stadium field would look like covered with plastic," says Eagle. "This was three times bigger."

His crew worked from first light into the night to install the drain and irrigation lines. "We had to get the sand in quickly to keep the wind from lifting the plastic barrier," recalls Eagle. "We also had to be careful to install the sand without damaging the drain lines."

The trucks started delivering the sand at a rate of 1,500 tons per day. As the tub began to fill with 14 inches of sand, Eagle had another job to do for the Forty Niners. He promised Norb Hecker to help interview prospective turf managers for the facility. Hecker wanted to hire someone before the sod was laid.

"One day we were busy installing irrigation pipe," Eagle remembers, "and I noticed an unfamiliar face among the crew. All the other people I had interviewed went straight to the trailer and waited for me there. A little while later, this person asked one of my guys where he could find me. He turned out to be Rich Genoff, the sports turf manager from Santa Clara University, who had come to interview for the job."

Genoff started his turf career at Atlanta Country Club in Atlanta, GA. George Burgin, superintendent in the late '70s, taught Genoff the fine differences between managing turf on sand greens and clay fairways. After three years, the Bay area native returned home and was hired by a land-

scape maintenance firm to take care of the athletic fields at Santa Clara University.

The Forty Niners trained at the university before moving to Redwood City. They used the school's sand-based Buck Shaw Stadium.

In 1981, the university hired Genoff as its first superintendent of athletic fields. During seven years with the university he had managed 13 conversions between football and baseball seasons. "It was a one-man operation and I spent mega-hours making sure everything was right for the teams," he states.

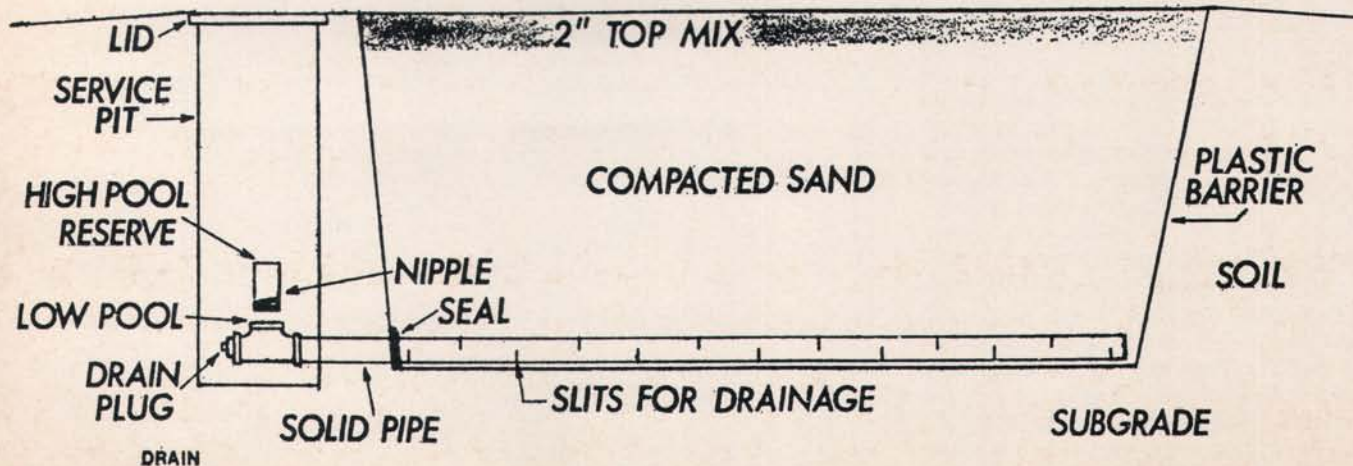
Genoff also felt strongly about the Forty Niners. When he heard the team needed a turf manager for its new training center, he had to apply. Hecker told Genoff it was a one-man job, but it didn't matter. With Hecker and Eagle's support, Genoff passed the interviews with Coach Bill Walsh and general manager John McVay.

Genoff reported to work in March. A week later he watched closely as Warren's installed the 201,000 square feet of sod on the practice fields and another 70,000 square feet on the lawn area around the buildings.

"Looking at the fields for the first time was just as great as looking at a spectacular golf course," he recalls. "I knew then and there that I wanted to remain a sports turf manager."

The training camp was scheduled to open in August. That gave Genoff the time he needed to allow the sod to become anchored. "There's a difference between rooting and anchoring," he remarks, "and between soil and sand. Just because you get the roots down eight or ten inches in sand doesn't mean the turf can't be pulled up. It takes months for the roots to knit together to form a tough base."

Genoff thinks of the practice fields as being like a hydroponic garden with the turf growing in a nutrient solution. Before the sod was laid, 20 pounds per 1,000 square feet of 6-20-20 was dragged into the sand.



Cross section of single-tier Purr-wick rootzone.

A month later he applied ten pounds per 1,000 square feet of 10-8-4 and watered it into the rootzone with the irrigation system. After another 30 days he began applying five pounds per 1,000 square feet of 21-7-14 on two-week intervals.

"The turf grows at a rate of 1/4 to 1/2 inch a day," says Genoff. He mows at one inch seven days a week with a Toro Turf Pro 84 that has three hydraulically-driven reels. "If I skip a couple of days I have to double or triple cut and sweep up the clippings to get the pattern back."

Genoff is following a preventative treatment program for pythium, fusarium, rhizoctonia and patch diseases. He begins applying Chipco 26019 in May along with either Subdue or Aliette. In areas of the fields where *Poa annua* has invaded he applies Endothall. If that doesn't control the weed, he plans to take another approach. In April he alternates Balan and Ronstar for preemergence weed control, followed later in the year with postemergence applications of Turflon. All chemicals are applied very early in the morning, when no players or staff are around.

Genoff begins some days at 4 a.m., using the headlights on his Cushman 530 Turf-Truckster to help him spray fungicides. The 100 gallon sprayer has a 16 foot boom. Later in the day he might attach a screen drag or brush to groom either the natural fields or the Omniturf. If he's not in his office, he usually can be found near the truckster loaded down with sand or tools.

In case of a break in an irrigation or drainage line, he hooks up a submersible pump to the vehicle's power converter to suck water out of the line. Then he plugs in a reciprocating saw to cut out the damaged piece of pipe. "With the power saw, I can repair a four-inch drain pipe in a few minutes," he reveals. "That same job used to take hours. The truckster is my second man."

Genoff's third piece of multi-use equipment is a John Deere 1050 tractor. To it he attaches either an Olathe drill seeder, a Lely spreader, a Ryan Tracaire aerator or a top-dresser. The final piece of equipment Genoff considers invaluable is a Bomag 130 AD 12,000 pound roller he rents to maintain a perfectly flat surface on the fields.

The training center's irrigation system is as flexible as its equipment. The above-ground system serves many valuable purposes for Genoff. In addition to irrigating the turf outside the field area, it allows him to "prime" or syringe the field surface during the summer. It is also used to water in chemicals and fertilizers.

"There are no irrigation heads on the field surface," he points out. The basic configuration is two side-by-side fields facing north and south. Half-circle heads are located on the perimeter, with one row of full circle heads between the two fields. Each Toro 690 head has a radius of 110 feet at 110 psi, provided by a PSI pump station drawing from a city water line. The turf outside the

Genoff has only had to depend upon the surface irrigation system on three or four occasions since the center opened.

field area is irrigated with Hunter Sod Cup I-40 heads. All 17 sprinklers are valve-in-head and controlled by an Irri-Trol MC Plus 12-station clock.

Because the subirrigation system has done the job so well, Genoff has only had to depend upon the surface irrigation system on three or four occasions since the sports center opened. "With the subirrigation system I can irrigate while the team is practicing without anyone knowing," he reveals.

Generally he subirrigates every two to three weeks. This is accomplished by opening three automatic supply valves in the drainage pit for an hour and a half. The

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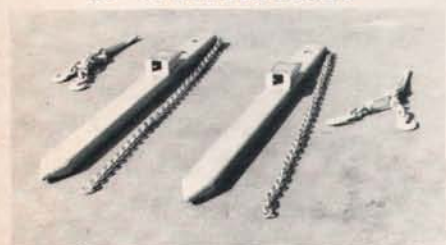
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Forty Niners

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water is distributed throughout the sand rootzone by the drain tubes. Genoff can check the water level at any time by inserting a dipstick into sleeves buried in the sand. "I know exactly how much water the turf uses," he adds, "and we don't waste a drop."

During extremely hot weather, Genoff watches for dry spots to make sure the wicking action is not upset by surface evaporation. "If I see a dry spot, I'll turn the sprinklers on early in the morning for 15 or 30 minutes to prime the wicking action between the surface and the water level in the field," he notes.

The only time Genoff has opened the drain valves was for heavy winter rainstorms. "You've got to remember that the nutrients are in the water," he warns. "The object is to conserve both water and nutrients."

One of the major advantages of the Purrwick system is the freedom it gives Genoff to take a square space and turn it into a number of different field configurations. "Since we have portable goalposts, I can actually rearrange things to provide five or more different fields," he reveals.

"I make sure the Forty Niners have the best turf possible between the hash marks all the time. We use one field at a time, switching from field to field on a weekly basis," he continues. "That gives me time to rest, repair, spike, and remark the other field." Last fall, Genoff wasn't satisfied with the center of either field, so he removed two sprinkler heads and turned both fields east to west. When the Forty Niners advanced to the Super Bowl, he removed a third head and set up a field down the middle facing north and south.

Following practice, Genoff sweeps the field used that day to remove any loose turf or debris. Before mowing, he also drags the field to lift any turf knocked down by players. "The rollers on the Turf Pro smooth out any divots or bumps," he adds. When he is finished for the day, both fields have a definite striped pattern.

During the winter, Genoff mows every other day and sweeps once a week. This past winter he core aerified, toppedressed with 100 tons of lapis sand, and dragged the fields in six different directions. This March, he drill-seeded the fields with three pounds per 1,000 square feet of A-34. "When the mini-camps started last month the fields looked new again," he said proudly.

Maintaining artificial turf was new to Genoff, but he has mastered it quickly. No marking is required, since the lines, hash marks and team logo are actually colored carpet inserted into the green Omniturf.

The sand dressing on top of the carpet does need to be brushed frequently and irrigated periodically. "The Omniturf field has its own irrigation system," says Genoff. "We had a small problem with wind blowing the sand around at first, but I've got a handle on it now."

There is one other innovative section of turf Genoff and Eagle are proud of: the training track. At the request of the trainers, Eagle designed a turf area 40 yards long and 15 feet wide. It slopes 3½ degrees from end to end. Players sprint down the slope to develop greater speed, or up it to stretch tendons and muscles.

"The two natural fields next to the Omniturf field are a sight to see," he concludes. "Who wouldn't be proud to work or play here? I always keep in mind that Ed DeBartolo, John McVay, Bill Walsh or Coach Seifert can look out their windows anytime to see the fields. But I also make sure the players and trainers like it. The bottom line is championship quality turf."

As the Forty Niners prepare for another season, the Denver Broncos and Phoenix Cardinals are installing similar natural and artificial turf fields at their training centers in arid regions of the country. Turf has been recognized as a major factor in the success of professional sports franchises. At the same time, the sports turf manager is playing an increasingly vital role in the winning formula.

"Nothing beats working for a world championship organization," remarks Genoff. "It's a dream job for me!" ☺

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WEST PALM BEACH HIRES COOK FOR SPRING TRAINING SITE

Murray Cook, groundskeeper for the Pittsburgh Pirates' minor league organization, has been named head groundskeeper by the West Palm Beach, FL, Park Department. He will be responsible for renovation and maintaining its spring training facility. The six-field complex and stadium is used by both the Montreal Expos and the Atlanta Braves for spring training, minor league play and instructional leagues.

The position was made possible by a \$500,000 bond issue passed last year to improve the facility. Two more fields are being added to the site as well as a new irrigation system.

During his career, Cook has rebuilt or renovated a number of minor league fields for the Pirates and the Philadelphia Phillies. His most recent projects include renovation of City Island Stadium for the Harrisburg Senators, Alex Duffy Field for the Watertown (PA) Pirates, and Municipal Field for the Salem (VA) Buccaneers. In the past he has helped renovate the Cincinnati Reds' spring training facility in Plant City, FL. He has also consulted for a number of eastern universities.

"Baseball clubs are putting new emphasis on their minor league operations," says Cook. "There is a tremendous need for

knowledgeable sports turf managers that has to be addressed by our schools." Cook has been cooperating with Pennsylvania State University to develop a curriculum for sports turf managers. "We hope to offer this type of training in Harrisburg in the coming years," he states. "If all goes well, a similar program could be set up in West Palm Beach."

TOMA, RAZUM NEWEST HEAD GROUNDSKEEPERS

Years of hard work in the field paid off recently for Chip Toma of the Kansas City Chiefs and Mark Razum of the Oakland Athletics. Both men were promoted to head groundskeeper by their teams.

Toma is a second generation groundskeeper who has been groomed by his father, George, for more than ten years. He has had primary responsibility for Arrowhead Stadium and the Chiefs' practice facilities in Kansas City, MO, and Independence, MO. For the last four years he has managed the National Football League turf crew for the Super Bowl.

"I've never been prouder than I am today," exclaimed his father after the announcement. "Chip has been ready to step up for years. I'm also proud of Andre Bruce, who will be associate ground-

skeeper for the Chiefs.

The promotions become effective November 1, 1989. George Toma will continue as head groundskeeper for the Kansas City Royals and may consult for the Chiefs for a period of two years. He calls the new arrangement "semi-retirement," considering he has worked without a break for years in order to handle the Chiefs, the Royals, the Super Bowl and Pro Bowl.

The Oakland Athletics, last year's American League Pennant winner, promoted Mark Razum from his post at the team's spring training center in Phoenix, AZ. Razum will continue to be responsible for field maintenance at Phoenix Stadium and the team's spring training facility at Scottsdale Community College in addition to his new duties at the Oakland Coliseum. Razum joined the A's in 1984.

He began his turf career at Cleveland (OH) Stadium working under Marshall Boscard preparing the stadium for the Indians and Browns. He left Cleveland in 1982 to become groundskeeper for the California Angels' spring training complex in Phoenix.

"Starting mid-season is tough," said Razum, "especially when you consider the Coliseum has a number of concerts scheduled for this year, in addition to an August exhibition game between the Los Angeles Raiders and the Houston Oilers." Razum hopes to make a few changes to the sand-based Coliseum field this winter.



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Daniel Varrey

Renovation Down Under: Australian Golf Course Fights for Perfect Couch

By Daniel Varrey

In December 1986, I received a long distance phone call from Craig Millen, a chemical supplier in Perth, Australia. He had read an article I'd written on the black layer. He wanted more information so he could help a local golf course superintendent by the name of Daniel Varrey. Millen saw similarities between my experience and Daniel's at Wanneroo Golf Club.

My first conversation with Daniel took place over the phone at 3:30 a.m. on a winter morning. I must admit having trouble understanding an Australian with a strong French accent, especially when I was half asleep. However, our mutual interest in each other's problems prevailed, and we have maintained a close kinship across the globe through letters and phone conversations.

Varrey has a degree in organic chemistry from a French university and became involved in golf course management in that country before moving to Australia. His peers down under jokingly call him the "algae man." He is an officer in the Western Australian Superintendents Association and has served as regional editor of "Turf Craft Australia," the official journal of the Australian Golf Course Superintendents Association. He has written articles on the black layer and algae in that publication, as well as the Journal of the International Greenskeepers Association in Europe.

I have treasured our friendship over the past two years and take great pride in introducing this fine golf course superintendent to the American turf community.

By Jonathon Scott

Wanneroo Golf Club near Perth, Western Australia, had spent a year without a golf course superintendent when I arrived in August 1984. Half the greens were dying, the fairways were infested with weeds that were competing with the *Poa annua* for cover, and the irrigation system was in a state of general disrepair.

In the next four years, with limited funds and even less equipment, Wanneroo again became a course to be proud of. The comeback was tough and not without surprises and setbacks. However, hard work, persistence, and a willingness to experiment paid off in the successful renovation of Wanneroo.

My first priority, naturally, was the greens. On close inspection, it was evident that eight of them had to be rebuilt the first summer. Australian summers occur when my colleagues in the U.S. and France are having winter.

The top four to six inches of thatch and mat were removed with a Bobcat loader and carried away. Sand from a pit dug on the course was used to replace what was removed, and then mixed into the remaining greens material with a rotary hoe to avoid layering.

At the time the thatch was removed, I noticed wide areas of white mycelium (filaments of fungi) in the matted material. Although the thatch was starting to decompose, it was quite water repellent. I thought this was due to the saprophytic fungi feeding on the dead organic matter, and I hoped one day to use these organisms to control thatch.

Since that time, I have realized the folly of my hypothesis, as the fungi have brought only fairy rings, dry spots and trouble. Unfortunately, the greens were rebuilt on this soil without benefit of fumigation, due to lack of funds. And the fungal mycelium was rotary hoed all over the place. In future

years, this would cause a great deal of trouble at Wanneroo.

Two of the greens were re-turfed with sods from the club's nursery, built on black topsoil. The actual greens soil consisted of a coarse orange and black sand, and I knew this inconsistency wouldn't help matters. The six other greens were seeded on site with Penncross bent. All of this was accomplished in less than three months with the help of the club members.

Trouble began immediately, with algae taking profit from frequent light watering during the seeding and germination stages in hot summer temperatures. I occasionally sprayed Mancozeb in an attempt to control the spread of algae on the new greens, with some success. At this stage, only brown slime and green algae were involved on the seeded greens, but blue-green colonies appeared on the two sodded greens as well.

Three months after establishment, I