

face, the coring process and cleat action incorporate the sand into the rootzone. Annual applications of sand prior to core aerifying are strongly recommended.

One of the best things a sports turf manager can learn is the difference in sands. The wrong sand can make matters worse, not better. The size of the sand particles and the pH of the sand are important factors. Sand analysis can be done by many extension or university testing labs. Samples for testing can be sent to Turf Research, Department of Agronomy, Purdue University, W. Lafayette, IN 47907.

Weed Control

To meet player and spectator needs, the turf should be weed free, dense, uniform, and wear tolerant. Applications of herbicides to control buckhorn, knotweed, chickweed, clover, and other weeds will be needed.

Of course, if the field is predominately crabgrass and clover, use of herbicides is a good way to lose your job. A field in this condition should be renovated when practical. Once the field is returned to desirable turfgrasses, then herbicides should be used regularly to keep it that way.

A three-way mixture of 2,4-D, MCPP, and dicamba has been widely used for weed control. Again, you may want to hire the services of a well-equipped lawn care company for herbicide applications.

Resodding or Plugging

Worn or damaged areas can be quickly repaired by transplanting plugs, chunks, or sprigs of growing sod from the unused edges of the field or from a local sod producer.

Damaged areas can be patched or sprigged and then topdressed with sand or mulch. Resodding areas as large as 20,000 square feet in the center of the field can do much to upgrade the field for one or more seasons of play.

Where possible, aerify immediately to improve water and air movement in the rootzone.

Mulching

Following the football season, the field may benefit from extra protection from harsh winter weather.

Spread seed, aerify, and mulch worn areas. Topdressing with leaves, manure, finely chipped tree trimmings, saw mill waste, peanut hulls, corn cobs, rice hulls, or decomposable organic matter can be of value. In the spring, sweep the field to remove any excess or large pieces of compost.

Vertical Drainage

Older compacted fields are benefitting from a process called sand slitting. Certain sports field contractors have machines that cut deep grooves into the

soil in a pattern and backfill into these with sand. This can make a surprising improvement in vertical drainage to fields without tiling or with tiling that is silted up.

Combined with core aerification, sand slitting can vastly improve an older field.

Supplies on Hand

Most turf managers have a limited budget. Scheduling is also a limitation. The sports turf manager therefore must determine needed supplies, fit them into a budget, and have them on hand to fit the schedule of activities.

Planning and organization are major benefits to a field maintenance program. Waiting until the last minute to buy needed supplies forces compromises in both price and product. Compromises too often result in unsafe playing conditions.

As increased demands are made on the sports fields, improvements in irrigation, soil moisture sensing, water conservation, drainage, and rootzone renovation can be justified.

Editor's Note: Dr. William Daniel recently retired as professor of agronomy, Purdue University, W. Lafayette, In. He played a major role in the creation of the Sports Turf Manager's Association, the Midwest Sod Producers Association, and the Midwest Turf Foundation. He is the developer of the Prescription Athletic Turf field design and the Purwick golf green design.

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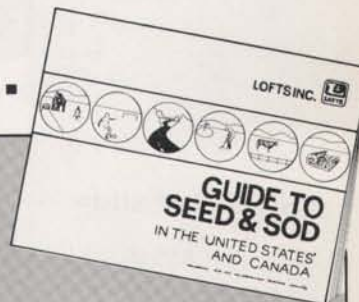
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For your free copy contact Marie Pompei, Research Department, Lofts Inc., Box 146, Bound Brook, NJ 08805, (201) 560-1590.



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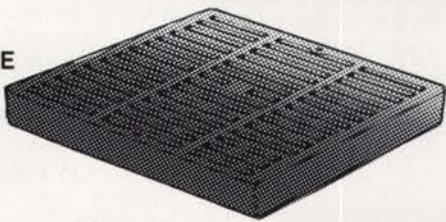
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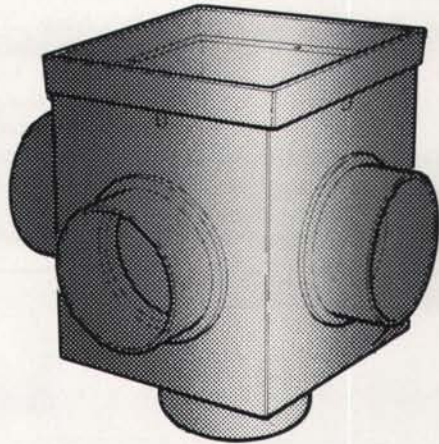
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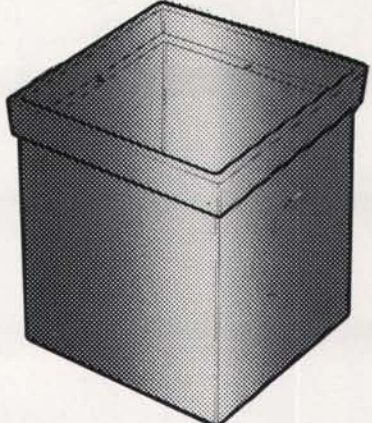
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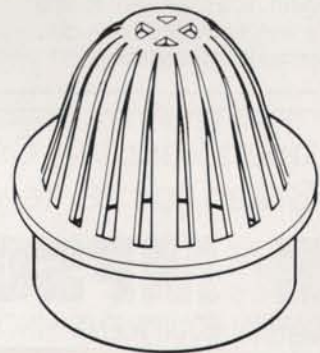
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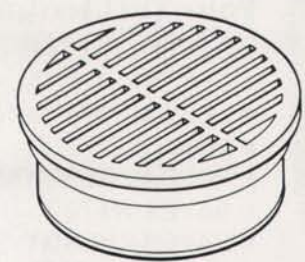
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These Men Knew All Along Sports Turf Would Have Its Day

By Bruce Shank

Athletic field managers have been defending public and private turf from a remote outpost for many years, while golf course superintendents and lawn care operators have received most of the attention. They have been provided with low budgets, outdated weaponry, and little consideration by the rest of the industry.

Now that the world has discovered the importance of their outpost, we have also discovered a few agronomists who never forgot them, never stopped developing new weapons for them, and helped these legionnaires make do with technology designed for other types of war.

Six of these wise men sit on the editorial advisory board of **sportsTURF** magazine.

Fred Grau is the dean of the advisory board. He was the first extension turf specialist in the U. S. in 1938 serving golf course greenskeepers, park superintendents, and sod growers in Pennsylvania. Fred worked with Burton Musser, a research agronomist at Pennsylvania State University, whose work in turf breeding and maintenance would put him in a turf hall of fame if there was such an honor.

Fred's accomplishments would fill three pages single-spaced if we had room. They include the development of Penngift crown vetch for highway erosion control, the codevelopment of the turf aerifier for West Point Products (later purchased by Hahn), directorship of the United States Golf Association Green Section from 1948 to 1953, early promotion of ureaformaldehyde nitrogen for turf, and most recently the development of the Sports Turf Research and Education Committee of the Musser International Turfgrass Foundation, a nonprofit organization for turf. In his eighties, Fred never let's up.

I'll never forget **Bill Daniel's** retirement dinner at the Midwest Turf Conference last March at Purdue University. In one room sat the Who's Who of turf, all former students of Bill during his 30 plus years of teaching agronomy.

If his name sounds familiar, it may be because he is the codeveloper of the Prescription Athletic Turf (PAT) system, probably the best known natural turf design on the market. It would be hard to find a sod grower, golf superintendent, or athletic field manager in the Midwest who is not aware of Bill Daniel. He helped start the Midwest Turf Foundation, the Midwest Sod Producers Association, and the Sports Turf Managers Association. His turf curricula at Purdue was copied by many other state universities.

Henry Indyk, professor of soils and crops at Rutgers University, has also developed a national reputation for his work in sports turf and sod production. He is part of the Rutgers turf brain trust which includes turf breeder Dr. Reed Funk and weed scientist Dr. Ralph Engle.

Henry is a person who doesn't stand for sloppy construction or maintenance. His attention to detail made him the best candidate for executive director of the American Sod Producers Association when it was new and the New Jersey Turfgrass Foundation for more than 20 years. That same trait propels him energetically into the area of safer sports turf.

He will outline his views of basic field requirements in the November issue of **sportsTURF**.

Roy Goss, extension agronomist for Washington State University in Puyallup, has been helping natural turf survive overuse and too much rain since 1958.

Roy has authored some of the best extension publications available on sports field construction and maintenance. He has also been the architect for more than 15 golf courses in Washington and Vancouver, Canada. One of the courses he designed is listed as one of the top 75 public courses in the U.S. by Golf Digest.

Another leader in writing publications for sports turf is **Bill Knoop** from Texas A&M University's Dallas campus. He joins the **sportsTURF** board to represent southern sports turf.

Bill works closely with the Texas Rangers baseball club and will host a sports turf conference at Ranger Stadium this coming spring with the help of field manager Jim Anglea. **sportsTURF** magazine is proud to sponsor this important event.

Finally, everyone in California knows him as Vic...Gibeault, that is. **Vic Gibeault** too is part of a brain trust. The California extension service has been blessed with the likes of John Madisen, Bill Davis, Vic Youngner, Kent Kurtz, and Gibeault.

Vic is closely involved with some major developments in sports turf. He is a close observer of sod grown on sand for resodding sand-based sports fields, combinations of warm and cool season grasses, and fertigation. Vic is a leader in educating sports turf managers in Southern California on proper field construction and care. His research emphasis is important to sports turf technology as it enters a new growth phase.

These six innovative veterans of sports turf provide a strong foundation of guidance for this magazine. ▶

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U.S. CHEMICAL MAKERS FIGHT FOREIGN PIRACY

Years of research and millions of dollars go down the drain, say chemical manufacturers, when foreign countries fail to protect U.S. manufacturers' patent rights. The National Agricultural Chemicals Assoc. has issued a warning that it will refuse to export to countries that do not provide adequate product protection. Taiwan, Mexico, Brazil and South Korea are mentioned specifically.

Ed Tocker of Du Pont's legal staff made this statement on behalf of NACA: "In the face of piracy, agrichemical innovation becomes a poor investment."

Last year U. S. companies marketed \$1.5 billion in crop protection chemicals overseas. The companies are responding to concerns by investors about the loss of protection overseas. Without protection, manufacturers in foreign countries can copy chemicals and undersell U. S. competitors because they bear no development costs.

Tocker said the U. S. trade representative needs to enforce existing trade agreements requiring patent protection before exporting into a country is permitted.

U.S. ARCHITECTS TIP HAT TO BRIT



Peter Dobereiner (left), golf columnist for the London Observer and Golf Digest, receives the American Society of Golf Courses Architects Donald Ross Award from ASGCA President Michael Hurdzan during the association's annual meeting held this summer in Ireland.

SLIDE SET RELEASED ON FIELD MAINTENANCE

The American Society of Agronomy has made available a 79 slide program on maintenance of athletic fields. The slides and seven-page narrative written by John Shoulders of Virginia Polytechnic Institute and Roy Goss of Washington State University covers fertilization, mowing, cultivation, irrigation, post-game repair, and practice field care.

ASA recommends the slide set for soil science lab classes. It suggests that students view the slide set first then inspect local fields for needed improvements.

The price of the set is \$30 from: American Society of Agronomy, Book Order Department, 677 South Segoe Rd., Madison, WI 53711.

YARBOROUGH TO MANAGE SALE OF LESCO'S PRE-M

Robert Yarborough, former sales representative with MoBay and Tuco Div. of Upjohn, has been appointed marketing manager for Pre-M (pendamethalin) by Lesco Inc. Yarborough knows turf as well as sales from his five year's experience as a golf superintendent and a degree in agronomy.

Lesco Pre-M is a new pre-emergence herbicide being released this fall.

GOLF COURSE ASSOCIATION TO MEET IN PALM SPRINGS

The Golf Course Association, organized for privately-owned public golf courses, will hold its fourth annual meeting at the Marquis Hotel in Palm Springs, Calif., Jan. 14-17, 1986.

Conference Chairman Fred Stewart says the program will include sessions on "Extending the Season by Developing Housing and Giving Your Course a Resort Atmosphere," "Building a New Clubhouse," "Updating Your Marketing Plan," and "Pro Shop Merchandizing."

The Bob Hope Classic follows the conference on Jan. 18-19 for tournament goers. For more information contact GCA, 111 East Wacker Drive, Chicago, Ill. 60601, (312) 644-6610.

GROUNDS MANAGERS TO GATHER IN TEXAS

The Flagnip Inn in Arlington, Texas, will be the site of the 73rd Conference and Trade Show of the Professional Grounds Management Society, Oct. 20-23. Lady Bird Johnson will kick the show off with a speech Wildflowers and Beautification.

Topics include Water Management, Proper Illumination, Public Relations, Handling Complaints, Free Enterprise

Working for Profits, Sports Turf Management, and Bedding Plants.

Tours of the Dallas and Fort Worth Park Systems are planned. A one day post-conference workshop on Basic Management Skills for the First Level Supervisor will be offered for the first time. The conference will close with the awarding of the annual grounds maintenance awards.

For more information contact Allan Shulder, PGMS, 3701 Old Court Rd., Suite 15, Pikesville, Md., 21208, (201) 653-2742.

CALIFORNIA SEMINARS FEATURE STADIUM MANAGERS

Field managers from Anaheim Stadium and Candlestick Park will be the featured speakers of the Second Annual Athletic Field Seminars to be held Oct. 29-30 at the Anaheim Holiday Inn and Nov. 12-13 at the San Francisco Airport Holiday Inn.

In addition to Don Marshall, field manager at Anaheim, and Barney Barron of Candlestick, program attendees will also hear from Steve Wightman, field manager at Denver, Colo., Mile High Stadium.

The seminars are endorsed by the Sports Turf Managers Association. For further information contact Rick Ruiz, seminar coordinator, at (415) 898-1281.

Stephens and Goto flew back to Las Vegas. Time too has a way of flying by.

Under Goto's supervision the entire field was excavated. A new irrigation system was installed. Drainage was given more attention. Pea gravel was put down and then 18 inches of sand was placed over it. Finally, Canadian peat was incorporated into the top three inches of sand.

By December 1984, Cashman Field was ready to receive the new sod. Truckloads of sod were hauled to Las Vegas from Camarillo and installed under the supervision of Goto.

"When I visited the site and saw the installation, I was very impressed," remarked John Culbertson, director of marketing for Pacific Sod. "The tight seams and closeness of the sod rows to each other was tedious work, but it looked great! They certainly installed the sod right." In one day the first 27,000 square feet of sod was laid. The rest, for a total of 39,000 square feet, was installed the following day. Now the job was complete. Time would tell if Stephens would take a third strike.

One problem remained... it haunted all those involved over the winter months. Would the Santa Ana come out of dormancy in time for the opener of the 1985 season? Culbertson assured Goto it would. But, in mid-February, Goto began to panic.

"We didn't realize the Santa Ana was still dormant. The seams had not yet knitted together. Nothing seemed to be happening. In desperation we covered the field to force the turf to grow," Goto revealed. "There was an eight degree difference between the turf under the blanket and the exposed turf. That really made a difference."

Goto exclaimed that one could begin to see the grass grow. As February turned into March and March into April, a new season was upon them.

This time Cashman Field was beginning to look like the professional field everyone had envisioned from the beginning, three years before.

On opening day 1985, those same fans who had booed the field last season were treated to a magnificent-looking playing field. SportsTURF magazine visited the field in mid-July. It should be noted that we were duly impressed.

"Since April, we have verticut the field and aerified," stated Goto. "That really made the bermuda pop."

To make the happy ending of the story happier, Goto spent only \$270,000 of the allotted \$330,000 rebuilding the field. The remaining \$60,000 went back into the treasury. Goto is proud of being part of a team effort that sought the challenge. Stephens now has happy fans and a showcase. As for Las Vegas, it has a field that truly measures up to major league standards. ▶



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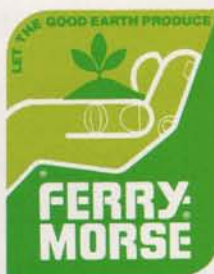
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Irridelco engineers had sports fields and parks in mind when they designed the Mini Traveler. All components are mounted directly on the open chassis for easy access and all parts are stockable for easy maintenance. The "surround the reel" design of the galvanized chassis distributes stress more effectively than "under the reel" designs according to the manufacturer.

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