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VOLUME THIRTEEN, NUMBER FOUR

APRIL 1997

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Ask turf managers what single improvement would most enhance their fields and you'll probably hear: "Drainage!" If you've got drainage problems, sports-turf specialist Jim Puhalla probably has a solution

12 Hard-Working Mark Light Stadium Earns College Diamond of the Year

Perfectly manicured skinned areas and emerald green fields are a magnet for baseball players. Tops in the college ranks is the baseball field at Mark Light Stadium, home of the University of Miami Hurricanes. Its near-perfect condition, despite constant use, has earned it the 1996-1997 Beam Clay College Baseball Diamond of the Year Award.

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Arizona is on the cutting edge of spring-training facilities. Eight Major League teams have already set up shop in this "baseball heaven," and two more are on the way.

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Floyd Perry shows how, with a pump and a bag of drying agent, you can take the "delay" out of rain delays.

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On the Cover:

Bay Snow prepares Mark Light Stadium for another long season. Photo courtesy: J.C. Ridley.

TORN UP

...About The Shape of Your Turf?

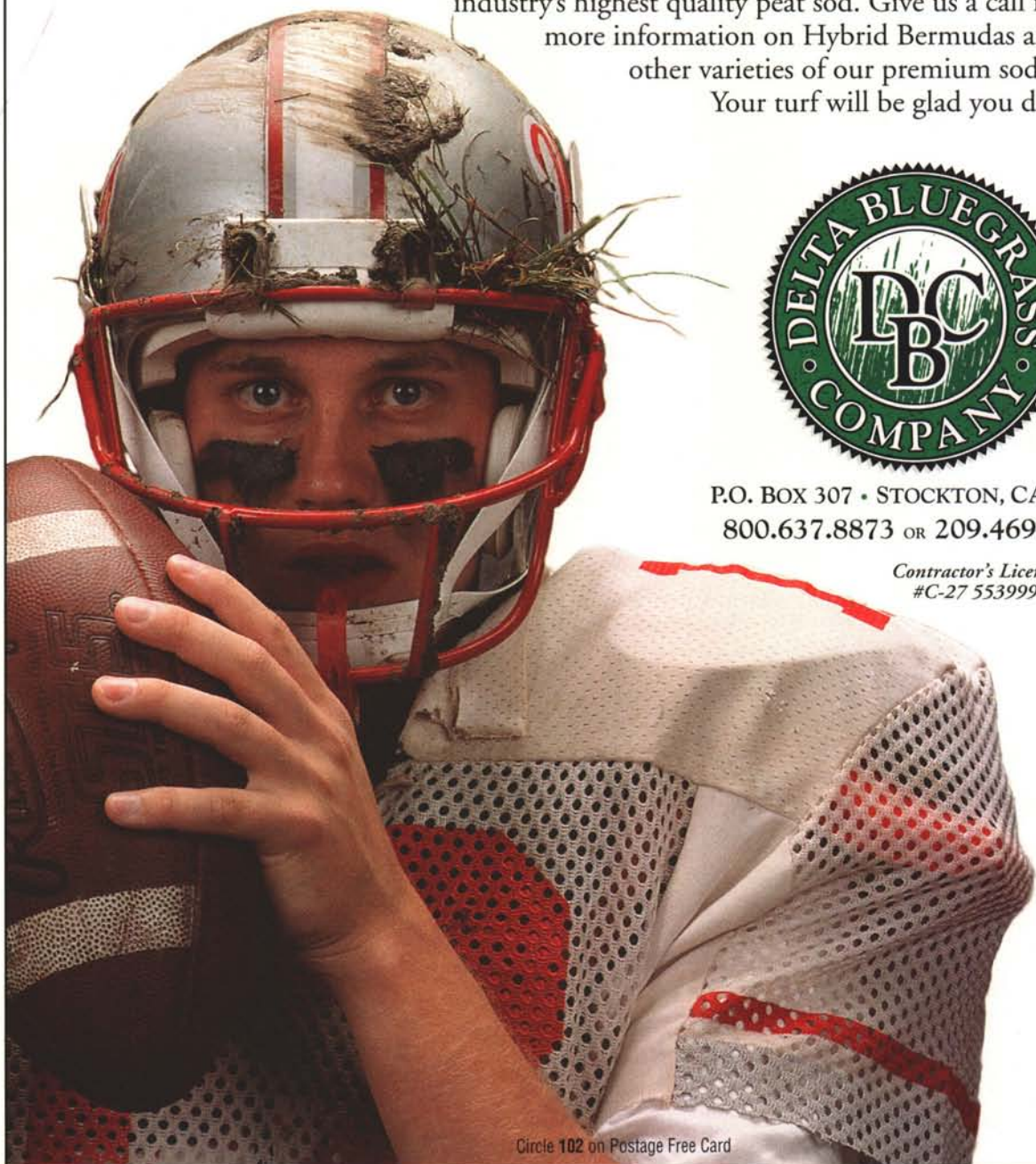
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THE FRONT OFFICE

OPINION PAGE



Helping Hands

Readers should never hesitate to point out mistakes they see in this magazine. Our staff welcomes corrections as a way of keeping the magazine as accurate as possible.

For this reason, I thank Jeff Cole, the marketing director at West Coast Turf, for catching an error that appeared in the November/December 1996 article "Wimbledon Never Looked Like This!"

Cole told us, "All turfgrass areas are not PD102 as stated in the article but are Tidwarf hybrid bermuda. The tennis court was sodded with Tidwarf sod washed to remove all the soil. I checked with Wally Camp at Desert Mountain Properties, and he confirmed this."

I also thank a reader in Florida for pointing out an inconsistency in the article "Grounds Crew Safety Practices" in the September 1996 issue. In the text on page 11, the article advises that "all members of the crew need to wear appropriate clothing, which includes long pants, shirts and boots," but the photos on pages 10 and 11 show people wearing short-legged pants and short-sleeved shirts. In this case, do as we say and not as we show.

While thanking people, I must express gratitude to the members of the Colorado Chapter of STMA, who so graciously and flawlessly hosted STMA's fast-paced, fun-filled, multi-faceted annual conference last January in Colorado Springs. Any number of things could have gone wrong during the proceedings, but to my knowledge, nothing did.

To the thank-you list, add Mary Owen and her cohorts on the conference's Education Committee, who served up a well-balanced diet of seminars. Viewing the menu prior to the conference, I saw nothing but dishes I wanted to sink my teeth into — except for one, "Protecting Skin from Sun Damage," because health topics tend to bore me. Ironically, the session turned out to be one of the most memorable, and certainly the scariest with its grisly photos of skin cancer and frightening statistics.

It was that kind of conference — never a dull moment — with each event meeting or exceeding expectations. The excitement started with a snow storm that blanketed Colorado, through which educators, exhibitors and turf managers trekked to contribute wisdom in classrooms or relate in hallways experiences that did not always go unheard or unappreciated by someone standing nearby.

Appropriately, the conference culminated with an "and then some" banquet speaker, George Toma, who has served as a groundskeeper for 54 years (he started his career at age 12 at the Cleveland Indians' old field). Toma described himself as the "the nitty gritty dirt man and black sheep of groundskeepers because I tell it like it is. If I rip you, it means I love you — I only criticize those I care about. I know I perturb people, but I do it to help get the best fields possible for the kids and the other players."

Although his methods may differ in some ways, Toma in other ways seems typical of most groundskeepers — as friendly as he is tough and willing to extend a helping hand to anyone who asks.

Jim R. Liss

EVENTS

CALENDAR

April

16 Automatic Rain Company's 1997 Turf Day. Alameda County Fairgrounds, Pleasanton, Calif. Contact: Automatic Rain Co. Phone: (415) 328-2700.

20-23 The Management Systems Council (MSC) hosts its 31st National Conference & Technology Exhibition. Banff Springs Hotel, Banff, Alberta, Canada. Contact: Lori Burke. Phone: (703) 838-1721.

22-23 University of California Extension, Davis (in cooperation with U.C. Cooperative Extension), offers "Integrated Turfgrass Pest Management for Professionals." Contact: University Extension, University of California, Davis, CA 95616. Phone: (916) 757-8899.

May

5-7 Engine & Equipment Training Council (EETC) industry meeting to address the critical shortage of technicians in the outdoor power equipment industry. Irving, Texas. Contact: Virgil Russell. Phone: (512) 442-1788. Fax: (512) 442-1789. E-mail: opcert@io.com.

June

1-4 California Resource Recovery Association's (CRRAs) annual conference, "Zero Waste: Challenge for the Next Millennium?" Monterey, Calif. Contact: Gary Liss. Phone: (916) 652-4450.

July

17-19 Turfgrass Producers International's Summer Convention and Field Days. Minneapolis, Minn. Contact: Tom Ford. Phone: (847) 705-9898. Fax: (847) 705-8347.

26-28 International Lawn, Garden and Power Equipment Expo 1997. Louisville, Ky. Contact: Sellers Expositions. Phone: (800) 558-8767 or (502) 562-1962.

Send announcements of your events two months in advance to: Editor, sportsTURF, 68-860 Perez Road, Suite J, Cathedral City, CA 92234. Fax: (619) 770-8019.

STMA MESSAGE



By Mike Schiller

Play Ball!

Here's hoping your April showers are falling just right to keep your turf in top shape, yet still allowing those teams on your fields to play ball. With the increased heavy use of fields in all sports, the job of maintaining playable conditions and shuffling schedules is a never-ending challenge.

As I'm sure you've learned in your position and as I'm constantly reminded in mine, communication is as vital a part of sports turf management as mowers and fertilizer. Ideally, the decision of field use in less-than-perfect playing conditions either is yours to make or is based primarily on your input. Often spreading this message — to the athletic or program director, the coaches and players, the fans and supporters, and the community at

large — falls in your area as well.

Cooperation is directly linked to the effectiveness of your communication system. If you let people know what you're trying to accomplish with the overall field-care program and make it clear that games will only be canceled when the safety of players and long-term integrity of the field are at stake, 99 percent of the people will respect your decision.

STMA can't take that communication step for you — but, *working together*, you and STMA can help communicate the role of the sports turf manager both within the turf industry and to the general public.

My challenge to you is *get involved*.

STMA has been working over the past several years on an outreach within the turf industry to make ourselves known for what we are: a group of professionals with a viable, important role in turf care.

If you are reading this message, you must have some connection with sports turf. If you do, we need you as a member of National.

It takes a united effort of like-minded individuals to achieve any goal. Your knowledge, your expertise,

your ideas and innovations are needed — and wanted — as STMA moves forward toward being the leader in the sports turf industry, working to enhance, promote and improve professionalism through excellence in communication, training, research, education and services. All this will help us fulfill our mission of promoting better and safer sports turf areas.

I also challenge you to take an active role in your local or regional chapter. If there isn't a chapter near you, start working with other sports turf professionals to start one. I challenge you, as a group, to begin an active outreach within your community so people will know who we are, what we do, and why it matters. This may be through networking, training sessions, coordinated service projects or whatever combination of activities helps spread the message.

And — along with these challenges — I issue a *pledge*. In whatever you do to raise our level of professionalism, support our industry-wide goals and launch a viable community outreach program, STMA will be there to support you.

Communicate with us, so we can all "play ball" on the same winning team.



Get Serious With STMA

Application for Membership

The Sports Turf Managers Association (STMA) is an organization of professionals representing all segments of the sports turf industry. Our members work to combine the science of growing grass and the art of maintaining sports turf to produce playing fields that are both safe and aesthetically pleasing.

STMA provides members with a variety of benefits, including: education through regional institutes and conferences; support for sports turf research; facilities tours; a national awards program; access to the STMA National Conference and Exhibition; complimentary subscriptions to Sports Turf Manager and sportsTURF Magazine; and much more.

If you're serious about the sports turf industry, then it's time to become a member of STMA. Join today!

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| <input type="checkbox"/> Commercial (US or International) | \$175 |
| <input type="checkbox"/> Additional members from same company | \$45 |
| <input type="checkbox"/> Student (non-voting) | \$20 |
| <input type="checkbox"/> International (other than commercial) | \$75 |
| (must be in US dollars) | |

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For more information, contact STMA Headquarters at 800/323-3875

"Promoting Better and Safer Sports Turf Areas"



On fields also used for soccer, football bench areas can become muddy problem areas. Aim to have a consistent slope through the sideline areas to prevent this problem.

Sports Field Drainage

By Jim Puhalla

If you asked turf managers what single improvement would contribute most to the quality of their fields, you'd probably get "drainage" more than any other answer. We've all had to deal with rainout headaches, but the problems go even further. Some fields hold so much water in the spring that they can't be mowed. If you try to mow, the equipment causes ruts, and then you've got two problems to deal with.

For most managers, there are only two choices for improving drainage: (1) contouring fields to encourage positive surface drainage and (2) using internal drainage systems to relieve water-logged soil.

Surface Drainage

1. Design for New Construction.

Whether you're designing a single field or a multi-field complex, each field should be treated as an individual drainage unit. No field should be expected to perform acceptably with water running across it from an adjacent field. In laying out fields, make

sure to leave enough room outside (and between) the playing areas for cuts and fills, catch basins and swales.

Generally, field designs for surface drainage fall into one of two categories: a *crowned field* sloped to the sides or a *flat field* sloped to one side or to one end. The percentage of slope is one to 1.75 percent. If you are relying on surface drainage alone and will not install internal drainage, use a slope at the higher end of the range. Soccer fields are often designed using a lower percentage of slope, so internal drainage is usually needed.

Probably the most common type of football field is a *crowned field* with level sidelines. However, many facilities use one game field for both football and soccer. Unless there is consistent slope through the sideline area — which tends to get badly torn up by foot traffic at the football field bench area — the outer edges of the soccer field can become a quagmire.

On baseball and softball fields, the pitcher's mound should be the high point of the field. A good skinned area

contour design is crowned behind second base, with runoff directed toward the foul lines. This design helps to avoid standing water at the outfield arc, which is a common problem when a skinned area is meant to drain into the outfield.

Under most circumstances, internal drainage is not effective for the skinned area, where water percolates through the soil slowly. Positive surface drainage is the only way to ensure a playable field in wet weather.

Flat fields tend to be built that way because of the terrain surrounding the field. If it's impractical or too costly to build a crowned facility, the flat, sloped design can work very well. There are two factors to keep in mind:

- Consider internal drainage, at least in the lower half of the field, to prevent it from becoming too wet.

- Make sure your field records show that it's a flat sloped field, or someone ten years down the road might try to "re-crown" the field, causing a real mess.

2. Reconstruction. Reconstructing



Topdressing the field, then using a level bar like this one, can even-out the contours and improve surface drainage.

a field is the ideal opportunity to improve surface drainage. First, conduct a survey to verify how water moves through and around the field. Set new grades, then remove the sod and re-grade. When making cuts, make sure not to leave two inches of topsoil in one place and ten inches in another. If you're making fills, scarify the soil first to eliminate layering, which has a detrimental effect on water movement through the soil.

3. Renovation. A good way to deal with small drainage problems, such as mud puddles, is to topdress and use a level bar across the surface of the field. This process eliminates the unevenness of the field and provides a better-draining surface.

4. Maintenance. Many field managers overlook the fact that careful maintenance practices can help prevent drainage problems. Cutting the grass shorter during wet periods allows sunlight to reach the soil and dry it faster. Aeration (especially deep-tine aeration with vibration to fracture soil) can also help open up the soil for better drainage, and will allow air into the soil profile.

There are soil amendments that can help in emergency situations — such as the diatomaceous earth products now on the market. Typical examples include Agro-Tech 2000's Axis for soggy grass areas and Play Ball! for skinned areas. Additives absorb some of the water and help firm up muddy soil.

Internal Drainage Systems

According to Don Grigsby of Lun-

Drain Inc., internal drainage systems are often rated in terms of the "life of the system" — a useful measurement because some soil types will slowly infiltrate the drainage structure and eventually clog the system. Before installing any drainage system, check with your supplier to find out the life of the system you're planning to install and the things you can do to extend its life. Two common ways to extend system life are by digging wider trenches and using filter cloths.

1. Common Problems. In an internal drainage system, maybe the most common problem is drainpipe that does not slope properly toward

the outlets. Standing water in poorly sloped pipe seeps into the soil and eventually creates a soggy surface through capillarity. A consistent downhill slope toward the outlet will keep the pipe clean by washing the fines out of the pipe.

Another common problem is crushing of the pipe by heavy equipment. In fact, heavy equipment also causes another drainage problem. A heavily compacted sub-base prevents water from getting to the drainage system. Many plans and specifications call for a "compacted sub-base." To the excavator, these specs call for a sheepsfoot roller or vibrating roller. This equipment makes the sub-base so compacted that it is impervious to water, which passes through the topsoil but stops at the sub-base. The un-compacted topsoil will become fully saturated during a heavy rain, because the sub-base won't allow the water to pass through.

Actually, the solution to this problem is very simple. Adding to your specs the instructions "Avoid over-compaction of the sub-base" and "scarify sub-base before installing topsoil" will alert the excavator to the drainage dynamics at work in the field system.

2. Pipe Drains. The traditional type of drainage system for a sports field is the pipe drain. Pipe drains work by slowly and consistently removing water from the soil profile, including the sub-soil as well as the topsoil.

This type of system was once constructed of clay pipe, packed with coarse sand (typically 12 to 18 inches)



Strip drains can be used to target problem areas, like this one in front of a soccer goal.

around the sides and top of the pipe, to prevent the system from filling up with silt and clay. The trenches in which the pipes are laid (usually 1 1/2 to 3 feet deep) are filled in with gravel to a level about 6 inches beneath the surface, then are filled to ground level with soil. Today's drainpipe systems use perforated pipe, and need to be back-filled with gravel around the pipe.

3. Strip Drains. Modern technology is also providing some new solutions to the challenge of properly draining fields. One of these new solutions is called strip drains, produced by companies such as Lun-Drain. These are cloth-wrapped polyethylene structures about an inch wide and 4 to 6 inches deep. Strip drains are installed in the top 12 inches of the soil and require only a 3- to 4-inch-wide

trench. The strip drain is placed in the bottom of the trench and extends half-way to the surface. The trench is then filled with coarse sand to surface level. The sand should have less than 5 percent passing a 100-sieve screen. Strip drains should be laid out 45 to 90 degrees to the direction of the surface drainage and sloped one-half to one percent toward collector drains.

The advantage of a strip drain system is that the sand-filled trenches at surface level drain away some of the surface water without requiring it to flow all the way across the field. Strip drains also can be used as a targeted system to attack problem areas where water tends to collect.

Catch Basins

Catch basins are another common drainage structure used for sports fields and can be used in two ways.

They can aid in surface drainage where the surrounding terrain stops the movement of water, and they can be the "junction boxes" of internal drainage systems, allowing you to monitor their effectiveness. With any sports field, place the catch basins well outside the field of play and use a small grid on top.

One common drainage system design (often used with a crowned football or soccer field with a level 400-meter running track around it) uses a number of catch basins around the field, with swales from basin-to-basin to assist surface runoff. This approach has two drawbacks: it creates an awkward appearance of hills and valleys along the field edge, and the swales tend to stay wet for extended periods during rainy conditions.

A better option is to install a trench next to the track, sloping downward toward the outlets. Lay a one-half inch bed of pea gravel in the trench, then a 4-inch perforated pipe. Next, fill pea gravel to within 6 inches of the surface, top with coarse sand, and seed. The best sand has less than 5 percent passing a 100-sieve screen. The "sand drain" will serve as an open catch basin, draining both field and track, and eliminating the annoying swales to catch basins.

Conclusion

The secret to good field drainage is planning. Obviously, the best time to solve drainage problems is before they happen, when the field is being built. On existing fields with serious drainage problems, the wise course is to identify the most serious underlying problem and to plan ways to correct it. Stop-gap measures can provide a temporary fix, but unless a plan is developed for correcting the big problems, the "band-aid" fixes will have to be done over and over.

In the mean time, identify the steps needed to really correct the field's drainage, establish a timetable and budget, and start working with boosters or community users of the field to raise the money to do the job right.

Jim Puhalla is president of Sportscape International of Boardman, Ohio, and Dallas, Texas, and is the co-author, with Mississippi State University professors Dr. Jeff Krans and Dr. Michael Goatley, of a forthcoming book, Sports Fields - A Manual for Design, Construction and Maintenance, to be published by Ann Arbor Press, Inc. Chelsea, Michigan.



Installing a "sand drain" along the inside of a track can help to drain both the track and the field area inside.