

# FROM THE PUBLISHER



**T**here are always ways to cut corners. Just like there are short cuts in the sports turf business, there are similar short cuts in the publishing business. One of the obvious ways to cut corners is to use cheaper paper. I guess if we started out using cheaper paper that was a little lighter and grayer in color than what we are now using, would many of you know the difference? But we would, and we would know that we are not doing our best.

Another way for us to cut corners is to use fewer color photographs, and still another way is to take our articles out of Extension Service newsletters. Some magazines are just filled with product releases. If we were to do this, it would make our lives a lot easier. We don't cut these corners because I believe it would hurt us in the long run.

Cutting corners may save dollars but it reduces the value of a magazine to its readers and advertisers. We don't want that to ever happen to (b)sportsTURF. (t)We feel our mission is too important to risk the readership loyalty we have built in one short year. That's why we constantly feature our readers in our stories instead of dry subject matter that lacks the color you want in your industry's trade magazine. It doesn't attract your attention and you don't read it, we've wasted your time and our paper.

Many turf managers save magazines they receive in the mail intending to read them later. Many times they never get read and end up in the waste basket during spring cleaning. We want you to read **sportsTURF** the day you receive it, not weeks or months later. As magazines lose their value when corners are cut, so do athletic fields. This month we feature the number one corner cut on sports turf... drainage. Sports fields go rapidly downhill when drainage is neglected. Even though poor drainage is a leading cause of field failure, it rarely receives the attention it deserves.

Poorly designed or poorly functioning drainage systems are a major cause of compaction, turf diseases and poor footing. By simply meeting basic drainage standards, perhaps half the problems of athletic fields can be solved. It is one thing to not know about drainage but it is another to try to cut corners if we do have the knowledge. There is a learning curve for all of us in every facet of any business, and surely we are entitled to some mistakes. With drainage, those mistakes are hidden below the surface for most of the year. There is also a number of ways to conceal drainage problems. But, in the long run the problem will surface for everyone to see, and usually when the field must be at its best.

By comparison, if we make a mistake it is minor compared to what you can do on turf. A typo here or there does not spell disaster. But, put down too much fertilizer on a stadium field and burn the turf and it takes weeks to correct your mistake. Unless you compare the quality of paper we use to other publications, you might not notice that our paper is much whiter. But compare a field with good drainage to one without and the difference is apparent immediately. What's worse is that the players and coaches will notice, sometimes before you do.

Many times we all feel budget constraints. Rising costs keep the pressure on all of us to cut the budget. We too keep looking for ways to cut our budgets. However, I have mandated that we will not compromise the quality of our publication, just like you should not compromise the quality of your work.

I have learned a bitter lesson that money hurts only when you spend it. If you sacrifice quality for a handful of dollars, when the damage occurs to your turf and you try to explain that if you had those extra few dollars to spend this would not have happened, you will find it falls on deaf ears.

There are times we have to stick with our convictions despite the cost. We may have to take some heat, but as the song goes... "I took the blows and did it my way."

A handwritten signature in black ink, appearing to read "D. E. Jones". The signature is fluid and cursive, written over a background of horizontal lines.

Publisher



# THE FRONT OFFICE

OPINION PAGE

## PROTECT YOURSELF WITH THE RIGHT BID SPECIFICATIONS



**B**idding is both the guardian and curse of public sports fields. The nightmares caused by bidding are as bad or worse than the few instances of graft and overpricing that have occurred without it. Today, bidding according to outdated or totally incorrect specifications is often a roadblock to field safety and a growing cause of liability lawsuits.

In a recent example, a state university branch in the Midwest advertised for bids on a new stadium football field. One contractor who obtained

the specifications in order to bid the job, recognized the components set for the rootzone soil mix. He checked his files and discovered the specifications for the football field's soil were exactly the same as the state highway department's roadside soil specifications. In other words, the job called for the same seedbed as a highway right-of-way. When he asked who had specified the job he was told a major, respected landscape architect.

Had these specifications actually been followed, the resulting turf would have lasted less than two seasons and would have given natural turf another undeserved, bad impression. No wonder some major universities specify artificial turf, the base is the same as a highway.

What if a promising athlete, who had already been signed to a National Football League franchise, suffered a crippling, permanent injury while playing on an improperly specified football field as a senior? Would the landscape architect be partly liable? Could the school and its insurance carrier protect themselves by requiring a landscape architect to consult a sports turf specialist or a national sports turf association for construction and maintenance guidelines?

Who is to say that an aggressive lawyer representing an injured athlete wouldn't also drag the sports turf manager struggling to maintain a poorly-built field into a lawsuit? How many fields in this country are lawsuits waiting to happen?

I can understand design faults with fields built 20 years ago. But, for fields under construction today, there is no excuse for not meeting current technological standards. Landscape architects who design sports fields without calling the local extension turf specialist, the Sports Turf Managers Association or the National Sports Turf Council deserve to be named in lawsuits for injuries caused on these fields. They are as negligent as a maintenance director who lets a field decline through inadequate or incorrect maintenance.

It's just a question of what takes place first, the development of field construction and maintenance standards or a rash of lawsuits which will result in major increases in liability insurance rates.

If I were a landscape architect involved with a sports field project, I wouldn't wait for someone else to develop standards and use old ones in the interim. I'd consider hiring someone with considerable experience as a sports field consultant to develop standards to protect my firm until one of the associations or the local extension service develops them for my area.

School and park superintendents who don't require an experienced individual to review specifications prior to construction, for fear of raising the cost of a field project, face the same exposure. Short cuts are too risky in today's sue-happy world. Sports fields must be treated with serious consideration from both construction and maintenance standpoints.

Until recognized standards are developed for all portions of the U.S., it is extremely important to seek and utilize the best available specifications. Persons who go by roadside specifications today are asking for serious problems. But, even worse, they hurt those in the market sincerely trying to provide the best and safest sports surfaces possible.

*Bruce F. Shank*

# EVENTS

CALENDAR

## AUGUST

**14-15** Pennsylvania State University Turf Field Days, University Park, PA. Contact T.L. Watschke, 16 Tyson Building, University Park, PA 16802.

**26-28** International Sport Summit, Hilton Hotel at Rockefeller Center, New York City, NY. Contact Sport Summit, 372 Fifth Avenue, New York, NY 10018. (212) 502-5306.

## SEPTEMBER

**11** Ohio Turfgrass Field Day, Turfgrass Research Facility, Columbus, OH. Contact the Ohio Turfgrass Foundation, (614) 422-2601.

**20** Oklahoma Turfgrass Research Field Day, Turfgrass Research Center, Stillwater, OK. Contact Michael Kenna, extension turf specialist, Dept. of Horticulture, 335 Agricultural Hall, Stillwater, OK 74078. (405) 624-5404.

**22-25** Northwest Turfgrass Conference, Red Lion Inn, Pasco, WA. Contact Dr. Roy Goss, Western Washington Research and Extension Center, Puyallup, WA 98371. (206) 593-8540.

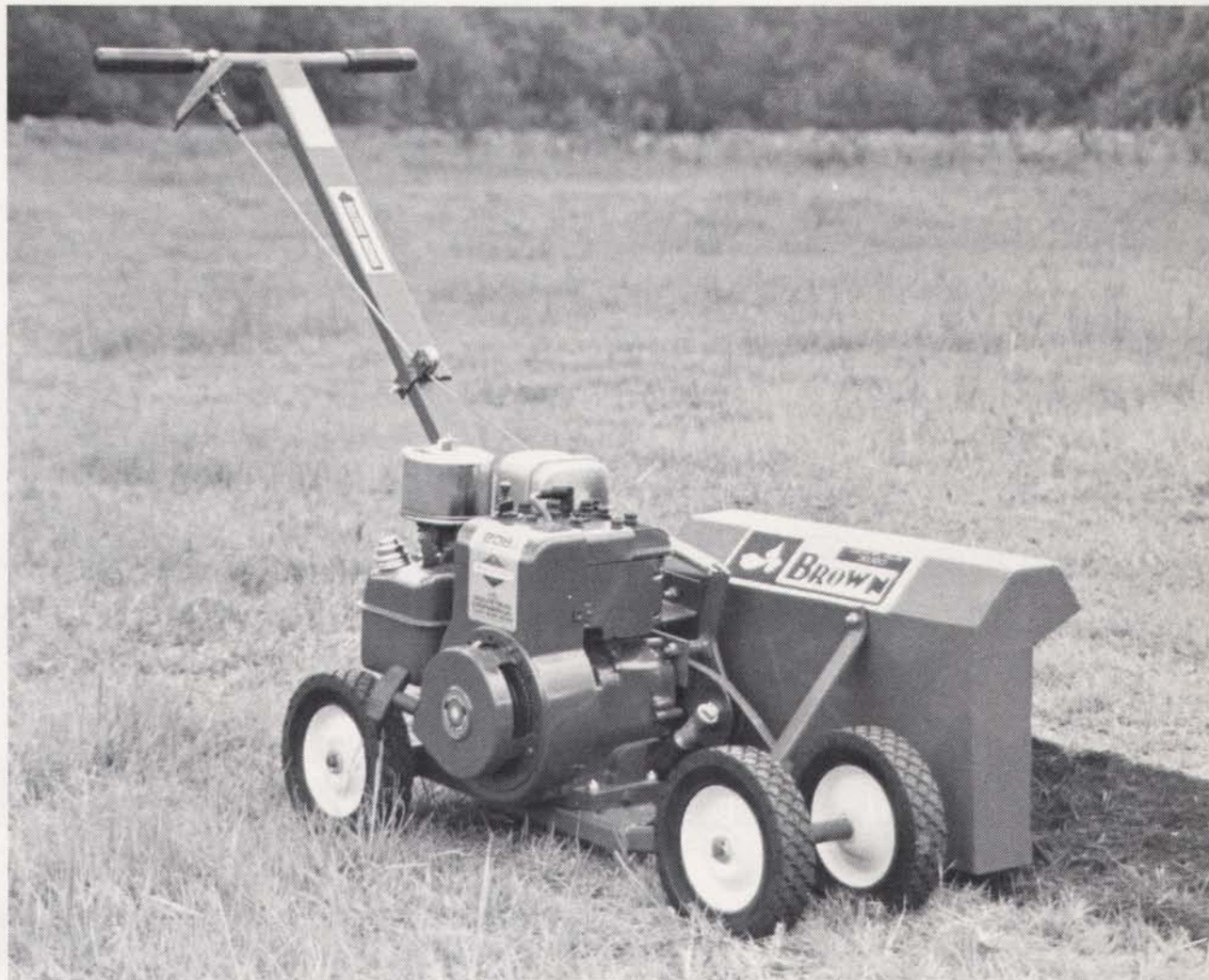
**27** Virginia Tech Turfgrass Research Field Days, Blacksburg, VA. Contact J. R. Hall, (703) 961-5797.

## OCTOBER

**6** Long Island Turf and Grounds Field Day, Huntington Crescent Club, Huntington, NY. Contact New York State Turfgrass Association, Inc., 210 Cartwright Blvd., Massapequa Park, NY 11762. (516) 541-6902.



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The narrow sand-filled trenches extended across the entire field. In less than a month, the new drainage system was hidden under spreading Kentucky bluegrass.

# Milwaukee Stadium Drainage and

**W**hen you're in charge of the turf at a big-city multi-use stadium, you may find yourself thinking forbidden thoughts. For instance...

You may wind up hoping that the baseball games don't go into extra innings—that the tractors in the tractor pull run out of gas—that the Rolling Stones don't do any encores—and maybe, just maybe, you may half-wish that Billy Graham won't have too many converts coming forward over your beaten and battered grass.

Of course, Harry Gill harbors no such thoughts, we're certain.

Gill is director of grounds and maintenance for Wisconsin's Milwaukee Brewers baseball club. The object of his concern and his tender, loving care is the field's lush emerald outfield and finely manicured infield.

Until 1985, the field at Milwaukee County Stadium—which is also used for four home games by the Green Bay Packers—was not a consistent champion. It had seen better



Harry Gill

days, better seasons, better years, and better decades.

Gill explains, "The stadium has been used since 1953, and there's been a myriad of events held here—not only baseball and football, but everything from rock concerts to Billy Graham meetings to tractor pulls. We were watering the field with hoses and sprinkler heads, and compaction had set in."

As Gill tells it, he could have resodded as he has for many years after football and special events have done their damage. But, 30 years of events had compacted the topsoil and rendered the old drainage system virtually useless. The choice narrowed down to a complete renovation of the field or—the course that was finally decided upon—a sand-slit drainage system and a new irrigation system."

The new systems are the result of careful notetaking by Gill for several years prior to its installation; detailed planning in collaboration with the general contractor; and





The sand groover, designed and used frequently in Europe, cuts and injects sand into two trenches at the same time.

# Sports New Irrigation Systems

a final design based on their mutual input. That design utilized Gill's own detailed history of the field and its problems—and his decisions on how to solve them.

"I've been working on what is built into it for seven or eight years," says Gill of the new irrigation system. "Every time I had a problem, I'd mark it down. So when the system was designed, they took into consideration all the problems we'd had over those eight years. That eliminated a lot of guesswork, because we had pretty good records of what had gone wrong in the past."

Gill also kept a loose-leaf folder containing a transparency of each event in the stadium, in the form of a diagram of the field. He drew areas of X's representing each critical wear area involved in that event.

For example, in football the space between the two 35-yard lines was a critical wear area. For a rock concert, it was the area where the audience stood. In baseball, it was the short stop-second base area,



Pipes and wires were pulled into the outfield soil by a vibratory plow to keep disruption of the playing surface to a minimum.

because that was the site of a return-ball screen where players gathered during practice.

"When I had all my critical areas showing, you'd be surprised how many of those areas of X's wound up in the same place," he says. Those were the areas of greatest concern regarding compaction, wear and tear, new sodding and overseeding. They showed him where the worst areas on the field were.

When it came time to convince Milwaukee County, owner of the stadium, that new irrigation and drainage systems were needed, the transparencies offered compelling visual evidence of the need for a change. Although the new systems cost over \$80,000, the Brewers' landlord agreed without argument.

What helped make Gill's case even more persuasive was the fact that the Brewers had won the league pennant in 1982. This

*continued on page 16*





The irrigation contractors installed pipe and wires on one side of the field while the drainage contractor was sand-slitting on the other.

#### Milwaukee Stadium *continued from page 15*

in turn had led to an increased attendance totaling 2,300,000 in 1983. With box office receipts up, the time was propitious for committing to improvements. Then it was a matter of waiting a couple of years for the promised funds to become available before work began.

Thanks to Gill's years of notetaking and planning, the final system was economical and carefully focused.

The general contractor on the project was Reinders Irrigation Supply of Milwaukee. Gill has been discussing the needed changes for years with Tom Emmerick from the company. Since there was less than two weeks to complete the work, two irrigation contractors were hired, Milwaukee Lawn Sprinkler Corporation and Wisconsin Sprinkler Company, based in Kenosha.

David Heiss of Turf Services, Inc., Spring Lake, MI, one of only three sand-slitting contractors in the country was the drainage contractor. For more than five years, Heiss has collaborated with G. W. Davison of Luton, England, learning European techniques for improving drainage of sports fields. A sand injection machine patented by Davison enables sports field contractors to restore drainage to compacted fields with minimal disturbance of the playing surface. All drainage work had to be coordinated closely with the installation of the irrigation system.

The installation was not free of problems and delays.

Michael Todd, owner of Milwaukee Lawn Sprinkler Corporation, explains, "Since the original time of construction was supposed to be during an away trip for the Brewers in August, 1985, it had to be done in a very

timely manner." Todd called Bud Leanna at Wisconsin Sprinkler Company and asked him if he would consider a joint venture. He agreed that it would make sense, because they could pool their resources.

Unfortunately, it didn't work out that simply—or that soon.

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### ***The management decided sand-slit drainage would be appropriate for Milwaukee Stadium.***

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There were only two bidders on the project originally, says Todd. When a problem came up with the other bidder, his firm had the only qualified bid. That wasn't enough, according to the county rules. There had to be at least two. "So, it was rebid and we finally got it. By that time, however, August had come and gone. In fact, we missed the Brewers' season completely, and we were into the Green Bay Packers' schedule." They play four home games in two home stands in Milwaukee and the system had to go in between them.

Weather during the Packers' schedule can be miserable, says Todd—cold, with rain and snow. "The possibilities were endless!" he sighs. "We moved in with eight people and two large trencher-pipe pullers, a smaller trencher and a smaller pipe puller. We al-

so had a little bucket loader, a dump truck, a wire trailer, a gas generator, and compacting equipment—ground pounders. Plus a lot of sharp shovels."

Fortunately, the weather turned out to be beautiful.

They began digging, working their way along the perimeter, starting on the first-base side. They were digging up an existing three-inch water main that circled the field and attaching isolation valves to it. In addition to the valves, they also attached sprinkler heads to the three-inch main with saddle clamps.

As Todd points out, this is strictly a hybrid system—one of a kind. Part-circle heads are needed on the perimeter to throw water toward the playing field.

The isolation valves on the mainline feed lateral pipes that crisscross the field. Attached to these lateral pipes are additional heads. Each head is a zone on the clock. "We had a maze of wires leading back to a central IBM computer that regulates each head individually," says Todd.

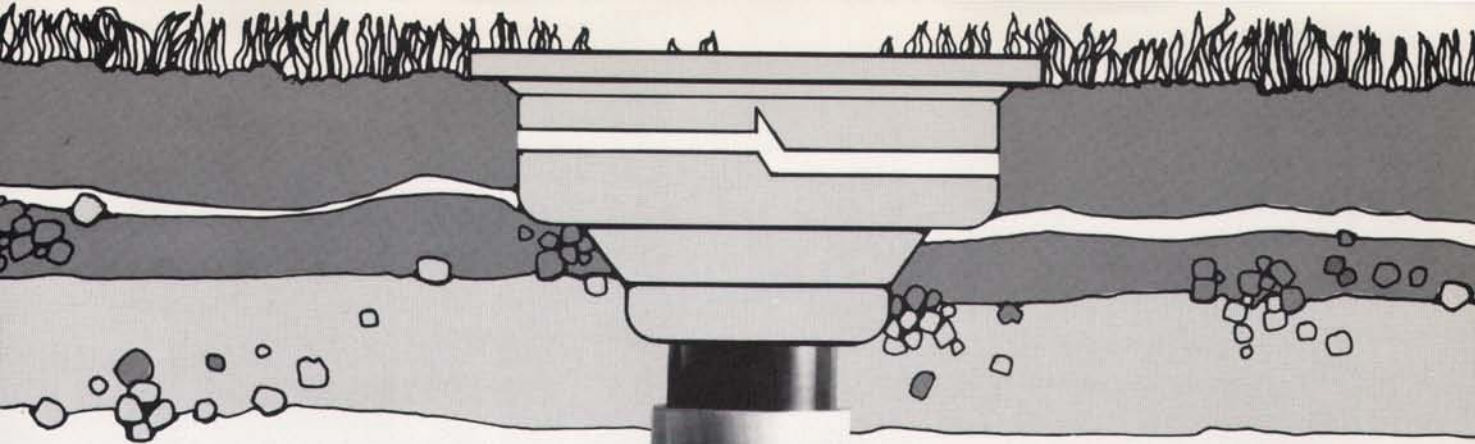
The sprinkler heads were installed slightly below grade—an inch or so beneath the sod. Each has a stainless-steel nozzle. There is no need for any type of plug atop the head, even when changing to football, because the small, recessed heads stay out of the players' way.

Todd recalls that the final work they did was dragging in the pipe and plowing in the wire. Then the heads were attached to the pipe, and the whole wiring schematic was put together. All of the heads and valves were wired.

The irrigation system consists of 57 Toro 640-02 Series sprinkler heads. Underneath

*continued on page 18*





# The Lasco Full-Circle Swing Joint.

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The first test of the infield irrigation was a success. The system lets Gill irrigate only the portions of the field that need water.

#### Milwaukee Stadium continued from page 16

each head is a one-inch, 216 Series 24-volt electric valve. Each valve is controlled by a station on one of five satellite controllers. The satellites are mounted in an enclosure and attached to a wall of the bleachers. More than 35,000 feet of wire connects the system's components together.

Today Gill exercises complete control over the irrigation system through the VT-3 video central irrigation controller in his office, which is an IBM personal computer with irrigation software.

In addition, there is a three-by-three-foot visual display panel in a nicely finished wood cabinet mounted on the wall above the controller. The panel consists of a one-to-20 scale diagram of the field in an overhead view. There is an LED at each sprinkler head location. When a head is in operation, its LED light is lit.

Whenever he runs the computer to irrigate the field, says Gill, "the lights will show me which sprinklers are active. That gives us complete control of any watering we need for dry spots, wet areas, resodded areas, or any other areas of concern. I can direct the water where it's needed right away.

"For instance, we have a problem with the grass when it's real hot and dry. If it doesn't get enough water, it starts to turn black and dies." This can even happen with the new, improved system. Gill explains that it is caused by "hot spots" in the turf, which "melt out." Fortunately, Gill is much better equipped now to fight it wherever it occurs, because from 12 to 15 heads can be worked at once.

He is running about 15 minutes per head on infield grass, about 20 to 25 minutes in

the outfield, and 15 minutes on the track heads. However, there is no calendar schedule for irrigation. The frequency depends on how much rain Mother Nature delivers.

Drainage work actually started with repair of the old drain pipe. Gill explains, "In the original installation they put in a lot of corrugated pipe about two feet down. It's on 25-foot centers and most of it is six- to ten-inch pipe. Through the years, that became clogged.

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### ***Thanks to Gill's years of notetaking and planning, the final system was economical and carefully focused.***

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"So we dug up critical areas and got the Roto Rooter people in with their high-pressure hoses. They cleaned up about 70 percent of it. But even with the pipes working, we had a tremendous amount of compaction in the 24 inches between the old pipes and the surface, as a result of all that rain and all those events."

So Gill had the new pipes put in at the 15-inch point. Trenches were dug down to that level during installation. They broke the compacted ground, says Gill, which let water pass down through those areas to the lower pipes. Then, on the top, he planned to have the sand slits.

"The combination of the old and the new drainage gives our field pretty good percolation," boasts Gill. We've had several storms here, and the water's been draining quite well. I'm very pleased with the field."

As soon as the irrigation contractors finished one portion of the field, Heiss would move in with his sand-slitting equipment. Heiss says that initially the Brewers were considering a Prescription Athletic Turf (PAT) System, which involves a sand-based root zone with sub-irrigation and elaborate drainage. However, that meant shutting the field down for a minimum of six weeks—the length of time it would take to remove the soil and build the PAT System.

The basic need was to improve drainage, Heiss observes. He says it was decided by management that the system used in European sports turf areas had been proven and would be appropriate. Called sand-slit drainage, it had been used in this country at Comiskey Park in Chicago. Roger Bossard, who is in charge of the Comiskey field, told Gill he was pleased with the results of sand-slitting his field.

Requiring special equipment that is made in England, sand-slit drainage places narrow columns of sand, five-eighths to three-quarters of an inch wide and up to nine inches deep, on a 20-inch spacing throughout the entire field.

Since it can be installed on an existing field, it is very cost-effective, says Heiss—a compromise drainage system that does not require the field to be taken out of play.

The sand used is tested in a laboratory to guarantee absolute particle-size uniformity. It is also tested for water infiltration to ensure that proper drainage takes place.

continued on page 44



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## INSURANCE ISSUE RAISED AT MIDWEST INSTITUTE

More than 250 field managers, athletic directors and park and school superintendents attended the first annual Midwest Sports Turf Institute held recently at Du Page College, Glen Ellyn, IL. They cringed as insurance specialist James Leatzow gave grim details of recent insurance settlements involving recreational areas.

Leatzow, who writes a large number of insurance policies for landscape-related industries, told the audience large settlements are the fault of many different groups, but they stem primarily from the fact that the U.S. has a high number of lawyers. "For



Field managers and athletic directors were able to try out products at more than 40 booths set up on the DuPage College soccer field.

each 2,000 people in Japan, there is one lawyer, compared to one lawyer for each 350 people in this country," Leatzow pointed out. These lawyers have convinced juries to award huge sums of money, so large that insurance companies often settle out-of-court for amounts higher than they should.

Without ceilings on liability claims, Leatzow says, insurance companies have no way of determining what premiums should be, so they stop issuing liability policies. "Liability lawsuits can take more than five years to settle whereas life insurance policies can be settled in weeks. It's just too hard for them to make a profit with liability insurance."

The two key areas sports turf managers should pay most attention to, according to Leatzow, are the condition of equipment and facilities and the availability of supervision. Juries will also question whether or not an accident was foreseeable. Leatzow urged sports turf managers to develop procedures to regularly check the condition of hardware and equipment.

More than 25 experts in sports turf management from across the country spoke during the one-day seminar and trade show. Concurrent sessions provided information for everyone from beginners to school superintendents and athletic directors. Management of high school fields to stadium turf was covered in detail.



More than 300 sports turf managers attended seminars covering a broad range of topics during the institute.

"We will definitely repeat this event every summer," said STMA executive director Kent Kurtz. Questionnaires returned by those attending the institute were favorable he said.

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