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## **Super Bowl XXII**

*continued from page 30*

This year's contest is between the University of Iowa Hawkeyes and the University of Wyoming Cowboys. Part of the logistics of the Holiday Bowl is the large Sea World emblem which will be painted in the center of the field. If the Chargers don't win their division but have the best team record, the stadium will host a "wild card" game on January 3. That gives Bossard three days to remove the Sea World logo and replace it with the NFL logo. If the Chargers win their division, the stadium could host a division playoff game on the 10th and the American Football Conference Championship game on January 17. That would leave less than two weeks to get the field ready for the Super Bowl.



Portions of the field are covered with dirt for motocross events.

While the Super Bowl is a major concern to Bossard, it is the primary concern of George and Chip Toma, the NFL field consultants. Bossard and the Tomas are no strangers. George Toma worked with Emil Bossard after World War II in Florida and Cleveland. "I'll never forget," he remembers, "the Cleveland field was bentgrass in those days." Toma credits the elder Bossard for much of what he applies today for the Kansas City Royals and Chiefs and the NFL. That same knowledge was passed down to George's son Chip. Wilson has known George since 1977 when the two first met at the Rose Bowl. The team of two of the leading families in groundskeeping and the respected Wilson provides the NFL with one of its strongest Super Bowl staffs ever.

The Toma's preliminary plan for the Super Bowl is to arrive in San Diego the day after Christmas. While Ph.D. perennial ryegrass is pregerminating for Jack Murphy Stadium, Chip will concentrate his efforts on adapting the facilities at San Diego State University and the University of San Diego to serve the two conference champions for four days of practice before the game.

The fields at the University of San Diego were resodded this past summer. Instead of overseeding, the plan is to paint the new fields with green turf paint and mark them just as they would a stadium field for a game, including the six-foot-wide side lines. "The main differences between college and professional fields is the location of the numbers and the hash marks," explains Chip. The college goal posts, 24 feet wide, will be replaced with professional goals, 18 feet 6 inches wide. Windscreen will be installed on fences around both practice sites to keep curious spectators from disturbing practices.

San Diego State's fields will be overseeded. Both sites will be provided with tarps and covered at night. "The practice fields are more important than the game field in a lot of ways," stresses George. As a result, they get as much attention as the stadium field.

If Jack Murphy does host playoff games, the Tomas and Bossard will have their hands full. If not, the pregerminated ryegrass will have almost a month to get established. Arrangements have been made to cover the field with perforated six mil plastic and blow heat under it with greenhouse heaters. A single inflated duct will carry heat from butane heaters down the center of the field.

*continued on page 34*

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**Super Bowl XXII**  
continued from page 32

A month is also plenty of time to grow out the turf painted with the Sea World emblem.

The worst case, or the best as far as the Chargers are concerned, would be the narrow two-week time frame if the team goes to the AFC finals. Just in case, Toma is making arrangements to have Kentucky bluegrass/ryegrass sod ready for the the area between the numbers. "It worked in San Francisco," states George. There, sod from Kesar Stadium was cut two inches thick in sections 18 inches wide and 48 inches long and installed at Candlestick. "Each piece had to be carried from the truck to the field on plywood because it was so heavy. You couldn't see the seams after Barney Barron's crew finished laying it. Not one section was kicked up by the 49ers during their game." The sod was heavily topdressed with calcined clay, he added.

While Bossard and Toma are working on the field, other crews will be adding another 12,000 seats in the end zones. On game day, 73,500 fans will pack into San Diego Jack Murphy Stadium for Super Bowl XXII. The center of the field will have the NFL logo, both end zones will be painted with the logos of the AFC and NFC champions and the perimeter of the green field will be draped with brightly colored banners. Few people will know how much effort went into preparing the stadium for the event.



All soil is washed off the Santa Ana sod before it is installed every March.

It will be the first Super Bowl for Bossard, the second for Wilson and the 22nd for George Toma. Four years of preparation will culminate in a few short hours. When it's over, Bossard and Wilson will start concentrating on the Padres' exhibition games in March and Toma will head for Florida to handle final preparations for the Kansas City Chiefs new spring training facility at Boardwalk and Baseball near Orlando, FL.

"I know there won't be any problems with the playability of the field during the Super Bowl," concludes Bossard. The Tomas will take care of its appearance for the millions of television viewers as they have numerous times before. "We are in the entertainment business," states Wilson. "It's our job to see that the NFL has a successful Super Bowl. That's what we get paid for and that is what we, as professionals, do."

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## SUPPORT DWINDLES FOR COLLEGE FOOTBALL CHAMPIONSHIP GAME

Even though sponsors drool at the prospect of a single, college football championship game, the directors of the existing bowl games and college conferences are opposed to the idea for fear it would upset the financial rewards of existing college bowls. The games can represent more than \$2 million to the football programs of the selected colleges and millions more to their conferences. The National Collegiate Athletic Association (NCAA) may rule on a national championship game during its annual convention this month.

The Big Ten, Big Eight, Pac-10, Southeast Conference and Southwest Conference have all voiced opposition to a college championship. Polls taken by some conferences of their member schools have indicated strong agreement against a championship in January.

One reason for a national championship is bowl picks are typically made before the end of the season and are limited to certain conferences. For example, the Orange Bowl has signed contracts with the University of Oklahoma and the University of Miami, ranked one and two respectively in late November. If the teams continued to win after presstime, the Orange Bowl will have been a national college championship game.

If they did not, the Fiesta Bowl could have stolen the show on New Year's Day with the University of Nebraska, currently ranked third, against fourth-ranked Florida State University.

In addition to money concerns, some colleges are concerned that a January event will conflict with final exams and add fire to the issue of sports versus academics.

## HOWARD COUNTY PARKS HOST SOFTBALL TOURNAMENT

Despite frequent interruptions from downpours, the first national American Softball Association (ASA) adult, modified fast-pitch softball tournament was successfully completed over Labor Day weekend on the fields at Howard County, MD. Forty-nine teams from across the country braved the wet conditions in a double-elimination tournament.

Chuck Fouke, division head of Centennial and Cedar Lane parks, used tarps, nearly eight tons of drying agent and tons more of sand to keep the eight regulation softball fields playable. ASA awarded the Howard County Parks crew with a commemorative medallion for their hard work.

It rained for a day and a half during the four-day tournament. Still, the Howard County crew worked closely with the tournament directors to get all the games in. "It was important, since it was the first time

for this national tournament, to avoid going to single-elimination," said Jeff Bourne, chief, Howard County Bureau of Parks. "Some of our guys worked 40 hours straight to prevent cancellations. They even took advantage of a break in the weather to mow the fields for the finals. Safety was especially important for the adult games."

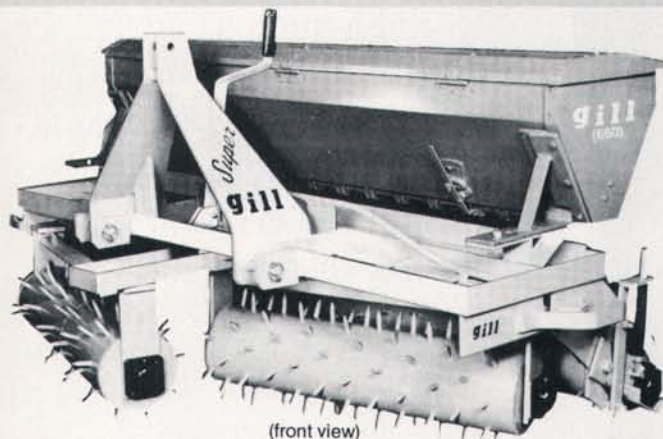
The park district hopes to host two ASA national tournaments this year. "We'd like to host the Labor Day weekend tournament every year," said Bourne.

## JOE ROBBIE STADIUM PREPARES FOR BASEBALL

Joe Robbie Stadium, the brand new home of the Miami Dolphins, will depart from its football field configuration for the first time to host Major League Baseball and a national soccer tournament. The Marlboro Cup Soccer Tournament on March 4 and 6 will be followed by two Baltimore Orioles exhibition games on March 11 and 12.

While the stadium field is one of the few in the country that is wide enough for a full-size, regulation soccer field, changes will be necessary for baseball. Dean Kuykendahl, grounds manager for the stadium, said part of the overseeded Tifway bermudagrass sod will be stripped after the soccer tournament to create the skinned area for baseball. "We are working out the details for base-

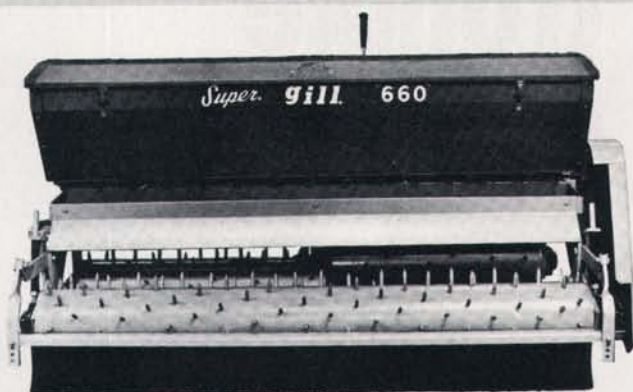
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(front view)

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(rear view)

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ball now with the help of Dr. Daniel (inventor of the stadium's PAT field) and Steve Wightman (manager of the PAT field at Denver's Mile High Stadium)," said Kuykendahl.

Mile High Stadium has developed a system where the field can be switched from football to baseball in a matter of hours. It involves a portable pitcher's mound, stands which move on and off the field according to the sport, and sod pallets that cover up the tracks the stands ride on. Anaheim Stadium in California has a similar system. These stadiums do not resod the skinned area until the end of baseball season.

The left field stands at Joe Robbie Field are not mobile, but they are considered temporary by the designers of the stadium, HOK Sports Facilities Group. The long range plans for the stadium include baseball, a step that would require making the left field stands portable. "We will not be changing the seating this year," Kuykendahl points out. "The left field stands will be 270 feet from home plate." The right field stands will be 350 feet from the plate."

The stadium, which opened last August, was constructed with a precedent-setting form of private financing. Advance leasing of luxury suites and club seating enabled Robbie to obtain private financing from banks. The same approach is being considered by a number of other stadiums to finance improvements and new construction.

## VIDEO TOUR OF TOP GOLF COURSES

Mobay Specialty Products Group is bringing 11 of America's most prestigious and beautiful golf courses to the International Golf Course Conference & Show in Dallas in the form of a 12-minute video titled, "The Greatest Golf Courses in America." The fast-moving tour is a tribute to the superintendents of the courses.

The program is a narrated series of slides profiling the best holes at courses including LaCosta Country Club in Carlsbad, CA; Doral Country Club in Miami, FL; Plainfield Country Club in Plainfield, NJ; Colonial Country Club in Fort Worth, TX; and seven other top-ranked courses. To take the video tour simply go to the Mobay booth at the show where it will be shown frequently during exhibit hours.

## NORTHEAST CONFERENCE IN PLANNING STAGE

An Eastern Sports Turf Conference on athletic facility maintenance management is being planned for Holy Cross College, Worcester, MA, this summer by the Professional Grounds Management Society (PGMS) and the Sports Turf Managers Association STMA.

"We're just in the planning stage at this

point," says PGMS President Jeffrey Bourne, "but we feel early July is the right time and New England is the right place." PGMS conference chairman John Abernathy has put together a preliminary list of topics for the educational seminars along with Dr. Kent Kurtz from STMA.

"The goal is a conference for middle management in charge of grounds at colleges, parks, schools and other athletic facilities," said Bourne. There is so much to cover, including irrigation, drainage, field preparation, chemical maintenance, soil amendments and event scheduling, that two days may be needed, he adds. "We want to let skilled sports turf managers, Extension turf specialists and suppliers show those responsible for athletic facilities all their options related to field safety and utilization."

The conference will feature seminars, outdoor demonstrations and exhibits. Jim Long, grounds manager at Holy Cross, is on the board of both associations. Both PGMS and STMA support the concept of regional events to serve the sports turf market. STMA also sponsors sports turf conferences at the College of Du Page in Du Page, IL; Daytona Speedway in Daytona Beach, FL, and Cal Poly in Pomona, CA.

For more information contact PGMS, 12 Galloway Ave., Suite 1E, Cockeysville, MD 21030, (301) 667-1833, or STMA, 400 N. Mountain Ave., Suite 103, Upland, CA 91786, (714) 981-9199.

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# Stop Blaming Those Valves For Failed Sprinkler Systems!

By Jess Stryker, ASIC

It seems that every time I turn around lately, someone is talking about the problem of fast-closing automatic valves. These valves are allegedly the culprits that are destroying sprinkler systems throughout the nation. (Fittings and pipe have also taken more than their share of the blame for poor irrigation, but mostly the valves are blamed.)

While the need for a slower-closing automatic valve cannot be disputed, I would argue that in most cases the fault for these failed systems lies with the designers and managers of the systems, not the valves. A professional irrigation consultant will design the sprinkler system to accommodate whatever valve is used, regardless of its closing speed.

The real culprit lies in the phenomenon known as water hammer. When water is brought to a halt in a pipeline, it causes an instantaneous increase in water pressure (psi) known as water hammer, or a pressure surge. The amount of the increase is related to the quantity of water, the speed it was traveling, and how suddenly it was stopped.

Because of the hydraulic properties of a liquid, this pressure surge travels throughout the connected pipelines until it is dissipated or finds a weak point to break out. This is why the breakage may occur in a place far removed from the source of the water hammer.

The least expensive and most reliable way to control water hammer is through proper system design. All automatic sprinkler systems must be designed to withstand some degree of water hammer. Even with the slowest-closing valve possible, there will still be other things that could cause excessive water hammer in the system, such as the slam of a backflow-preventer check valve during back-siphonage.

The trick is to limit this water hammer to a minimum and design the rest of the system to handle it. When designing most small sprinkler systems to industry standards, you will seldom have a problem with water hammer. (I didn't say never!) The important thing is to know when to call in an expert.

These conditions indicate a potential for

excessive water hammer: static water pressures in excess of 100 psi at the site; pipe sizes larger than two inches required; elevation variations anywhere on the site; use of any type of a pumping system; water velocity over five feet per second; more than one valve operating at a time on a single mainline; multiple points of connection to water supply on a single mainline; and water temperatures of 75 degrees F or higher.

The presence of one or more of these conditions calls for the design to be performed by someone familiar with design techniques for minimizing water hammer. Then the system must be used in the way for which it was designed. But remember—proper design is vital, for the bottom line in avoiding excessive water hammer in your sprinkler system is to do it right the first time. ☺

*Editor's Note: The author is an irrigation consultant and registered landscape architect whose firm is based in Fresno, CA. He has designed irrigation systems throughout California and several other states.*

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# Calculating Pump Efficiency

**R**emember those first word problems in math that stumped the entire class? They typically involved two trains starting out from different locations heading toward the same destination. The trains travelled different routes at different speeds and it was your job to find out which one would reach its destination first. The killer question came, however, when the teacher asked you to figure out what speeds both trains should travel to reach the destination at the same time.

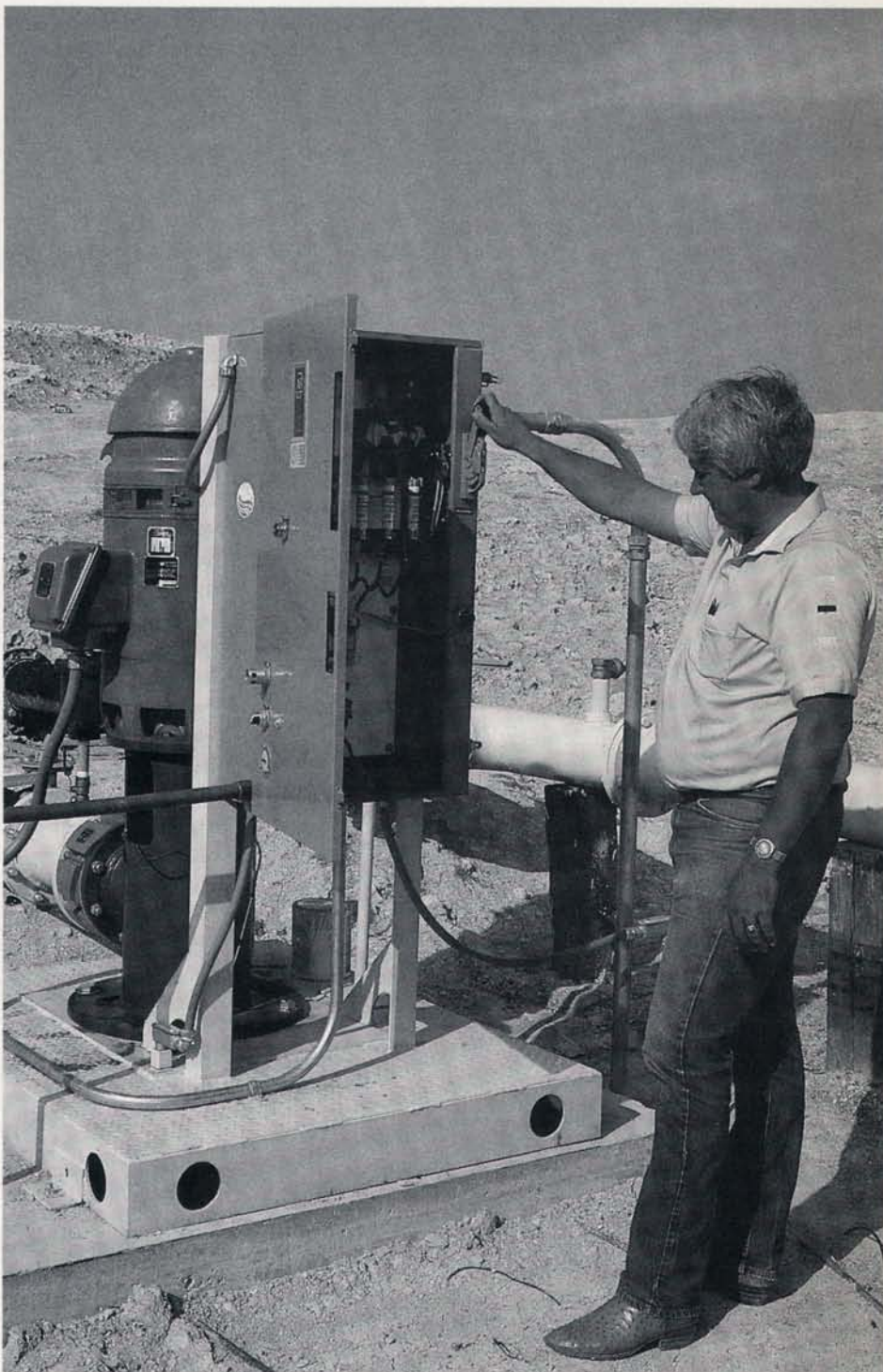
For the first time you were faced with balancing speed, time and distance together. If any one of these things changed, the other two also had to change for you to come up with the right answer. Most of us remember those math questions because they seemed so difficult at the time. We just hoped that we wouldn't be faced with questions like these later in life.

Questions such as these, like it or not, are a vital part of managing turf and landscape irrigation systems. Fortunately, today sports turf managers can rely on computers and irrigation consultants to handle many of the calculations necessary to balance water volume, pressure and time. Without math, it would be impossible to apply the correct amount of water to the proper locations at the right time. You need to know the pressure, the flow rate, and the distribution of water at each sprinkler head to set the right amount of time for each head or zone on the controller. But, most importantly, the irrigation system must have the ability to prevent all of these factors from changing during operation.

Irrigation manufacturers have been diligently developing products that take the guesswork out of controlling water application. They have refined their products to the point that irrigation specialists can design systems which deliver the exact amount of water as needed day in and day out. Those refinements begin at the pump station, continue to the valves, heads and fittings, and culminate with the controller and various devices that result in changes in water needs. But no matter what improvements are made, no irrigation system can attain maximum efficiency without a properly designed and functioning pump system.

Just 25 years ago turf irrigation was far from precise. Greens and tees were frequently watered by hand while fairways,

*continued on page 40*



Prefabricated pump stations containing pumps, valves, hydropneumatic tank and electronic controls, are used for more than 75 percent of new installations. Photo courtesy: Pumping Systems, Inc.

## Calculating Pump Efficiency

continued from page 38

roughs, parks and athletic fields were irrigated with quick couplers or other types of manual systems. The amount of water applied was based upon the experience of the irrigation manager and the appearance of the turf rather than knowing how much was really needed.

In those days, sprinkler heads operated at the pressure of the public water supply or of a simple pump system drawing water from a well or lake. This pressure could vary widely at times causing the amount of water applied during a specific amount of time to change. When a turf irrigation system is delivering thousands of gallons of water each day, a change in pressure can result in serious over- or underapplication leading either to waste or drought stress.

"Prior to the mid-'60s, all pump systems were different," recalls Gary Harbour, vice president of Carroll Childers Co., a manufacturer of prefabricated irrigation pump systems in Houston, TX. "About the only thing they had in common was a pump. Most were built on site by local contractors or superintendents according to their individual ideas and expertise. It was not uncommon to find a pump, with a suction line feeding directly out of a water supply, controlled only by a manual on/off switch."

The superintendent or irrigation specialist would simply put a pump on some kind of motor, describes Emil Gram, president of



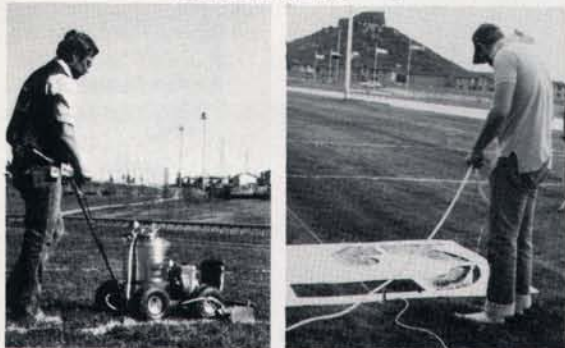
This pump, unprotected from weather and lacking pressure controls, is typical of older systems with poor energy efficiency.

Pumping Systems, Inc. (PSI), Dallas, TX. He would start up the system and then check to see what the end pressure was and how many gallons per minute (gpm) the pump system produced. If it wasn't sufficient for the requirements of the largest or highest zone, he would add another pump and another motor.

Gradually, sports turf managers added pressure relief valves and hydro-pneumat-

ic tanks between the pump and the irrigation main. These devices assured that the pressure in the lines remained at a constant, controllable level during operation. With pressure fixed at the pump station, the irrigation manager eliminated one major variable in determining water supply in the field. Then he realized that he could add a second or third pump in parallel with the main pump to match pumps more efficiently to

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