FOOTBALL FIELD PREPARATION

Graduating To Durable, Safe Gr

A school can't really make a commitment to a football program and not make an equal commitment to the field. One necessitates the other.
Both soccer and football are played on the main field at Chatham High School.

Nearly every red-blooded American boy has played “sandlot football” at one point in his life. He has huddled around a team-appointed quarterback to have the next play scratched out in the dirt or explained in terms such as, “Go out past the puddle, fake left, then go deep, on two.” When the huddle breaks up, the receiver locates the critical wet spot in the make-shift field so he can run his assigned pattern.

As a child starts playing Pop Warner football and graduates to junior high and high school ball, the game gets more sophisticated. The map in the dirt and the geographic description of the field are replaced with sets of letters and numbers from a playbook put together by the coach. The quarterback simply barks something like “P6 on 2!” This might instruct the tight end on the right to take two steps and then cut across the middle. It also tells the linemen and the backs how they should block.

The playbook gives the coach the ability to control the game from the sidelines. Teams practice every play over and over again until all 11 players on defense and offense perform “by the book.” After a coach has scouted his competition and selected the right plays for game day, there is one thing that can ruin all his planning—something the sandlot quarterback can react to faster than he can—a poor field.

High school coaches assume the field will be in shape when they make up their playbook, devote months to practice and spend thousands of dollars on equipment and supplies. It’s an expensive assumption to make when the turf on a field fails due to overuse, cutbacks in the maintenance budget, an overworked grounds crew or a lack of sports turf management expertise. A school can’t really make a commitment to a football program and not make an equal commitment to the field. One necessitates the other.

American public schools have been struggling with declining fields since the first baby boom. When budgets get tight, academicians tend to put a low priority on sports and grounds. Most school districts place the grounds personnel within the building maintenance or physical plant department. In many cases the grounds crew is a seasonal extension of the custodial staff. There is little motivation or authority to make significant improvements in the sports turf management program.

Furthermore, the director of physical plant is rarely someone knowledgeable about turf. His limited budget is spent where it can put out the most fires—resurfacing a parking lot, repairing roof leaks and maintaining the heating and cooling systems. The director of physical plant’s main input about the condition of football and practice fields comes from the athletic director or coach, who also lack expertise in sports turf, whether or not they will admit it. What can be so difficult about growing grass? It would appear that many schools are finding out.

The purpose of this story is to report success stories in football and practice field maintenance. Sports turf managers, school officials and sports turf contractors from continued on page 16
The center circle for soccer games is evident during football games at Chatham High School.

Soccer takes its toll on the goal area of the main field at Chatham.

Football Field Preparation
continued from page 15
across the country have been interviewed for the keys to their success. Not surprisingly, their advise is not all agronomic. Much of it deals with the management structure of the grounds department.

Great advances in football field care are being made simply by opening up a line of communication between the person responsible for the athletic fields and the administration. Frequently, a third party is needed to break the ice, such as the school booster club, the athletic director or a sports turf consultant. The first step is simply to admit that there is a problem with the fields, pinpoint the reasons for the problem and then make a long-term commitment to solving it.

The school fields, which were maintained by the custodial staff, were also showing signs of fatigue and were frequently criticized by the coaches. The school board, realizing it had an expertise problem of its own, decided to create one full-time exterior maintenance position for the entire district. John Hyland, a veteran of golf course maintenance and caretaker for the United States Golf Association headquarters in Far Hills, NJ, responded to Chatham's help wanted ad. After 15 years on golf courses, Hyland was ready for a change. He took the job and a relatively small $15,000 budget and went to work.

To show the athletic department and band, he supported Hyland, the school athletic director gave him the power to cancel events if he felt they would cause serious injury to athletes or the turf. “At first the coaches didn't like the idea, but they have since seen results from controlling field use,” explains Hyland.

Even with control, the use of the fields is tremendous. The growing popularity of soccer has resulted in both spring and fall leagues. This puts a definite strain on the football practice fields. To make matters worse, many of the fields are used for summer sports and band camps. “It’s not unusual to have 500 to 600 events per year on a field,” sighs Hyland.

Hyland knew from his years as a grounds superintendent to keep in contact with the administration on a regular basis and to record important information in soil tests, field conditions and corrective measures. “It gave me a chance to act like a consulting agronomist, developing solutions and building a maintenance schedule to implement them,” he notes. “I knew what had to be done, but it was important to let the school staff know my plan of attack and to keep them involved.”

The first items Hyland placed on his budget request were a pull-behind aerator, a large Buckner travelling sprinkler, fertilizer and plenty of seed. He sent soil samples to a laboratory for testing and ordered the fertilizer and soil amendments to correct nutrient deficiencies and soil pH. “Basically I needed to set the stage for an overseeding program,” he recalls. “First I had to relieve compaction by intensive aeration, then correct soil deficiencies.” Everything had to be ready for seeding when the spring soccer season ended in June. The seed had to germinate and get established before the team and band started practicing in August.

Hyland starts on the two practice fields and then repeats his program on the main field. The fields are overseeded twice in six weeks at a rate of 12 pounds per 1,000 square feet. He uses combinations of two perennial ryegrasses, three Kentucky bluegrasses and three turf-type tall fescues. “The ryegrasses provide quick cover and excellent protection for most of the field,” Hyland explains. “But, by the end of the sea-
Hyland irrigates once a week until the season begins. Then he depends upon natural rainfall and the players' cleats to work in three to four pounds per 1,000 square feet of overseeding mix spread every week during the season.

"We aren't trying to maintain the fields like golf greens," Hyland points out. "The idea is to keep the turf lean and green." The fields are fertilized only twice during the year for a total of one pound of nitrogen per 1,000 square feet. Broadleaf weeds are controlled with 2,4-D amine once in late April and again in mid-June. The only time he can make the applications is between 5 a.m. and 7:30 a.m. on weekends or after 4 p.m. on Sunday afternoons. He explored preemergence herbicides but found them too expensive for his tight budget.

Heavy aerification at least six times each year keeps thatch to a minimum. Hyland drags the field with a harrow to break up the cores and sometimes topdresses rough areas with sand. The football fields are mowed at two inches with a Hustler rotary mower twice each week. Hyland tried a reel mower when he first arrived at Chatham, but debris on the field kept knocking the reels out of adjustment. Now he uses the rotary at low speed and high rpm.

While his budget hasn't increased in eight years, he has been able to hire his son, John II, and Ed Curley to augment his maintenance program. His workload will increase significantly in 1988 when Chatham city schools merge with Chatham township schools. "The school district plans to combine the high schools," says Hyland. "That will double the use of the main football field and practice fields and hopefully will give us the funds to install irrigation and apply preemergence herbicides."

Hyland has been active in the New Jersey Turfgrass Association trying to organize fellow school sports turf managers in his area. "It's hard for schools to find good turf managers," he says. "Before they make a major commitment to sports field improvement, they need someone who is knowledgeable and experienced in athletic field maintenance. They are beginning to learn that a mower operator is not a turf specialist. At the same time, we have to show them that we understand the budget limitations of school districts today. With skilled turf management and an ample budget, Chatham and other public school systems can have the quality fields they desperately need."

Tim Gehring, landscape maintenance coordinator for the Worthington, OH, school system, is another sports turf activist. Not only has he been a major proponent of increasing the educational sessions on sports turf at the Ohio Turf Conference, he was recently appointed to the Building and Grounds Commission of the School Study Council of Ohio. Two years ago the School Study Council created the Commission to branch out into non-academic aspects of school administration. The Commission meets once a month to tour central Ohio school facilities. Thanks to Gehring, the Commission tours the athletic fields in addition to the school buildings and maintenance garages.

The Ohio State University-trained agronomist joined the Worthington Schools in 1985 during a major restructuring of the administration to handle building and grounds matters more effectively. A grow-
Football Field Preparation
continued from page 17

The field soil mix. Using a drop spreader he
applied the mixture to the area between the
young seedlings started filling in the thin areas. To
protect the center of the field during the games.

"The turf had two months to establish before
the football season started," Gehring recalls. "My job was to make sure that nearly $100,000 spent on the three fields was not wasted again." That fall, more than 42 games were played on the main field. "Not only did the varsity and junior varsity football teams play their games on the field, both girls and boys soccer teams did too."

To keep the fields in shape Gehring went to his bag of tricks. At mid-season, he pregerminated ryegrass seed and mixed it with the field soil mix. Using a drop spreader he applied the mixture to the area between the hash marks and in front of the goals. All divots were filled with the mix. "I'd like to get my hands on a germination blanket to cover the center of the field between games," he adds. Before the next game, the seedlings started filling in the thin areas. To protect the bench areas, he put down fabric tarps during the games. For soccer, he put both team benches on one side of the field covered with the bench tarps.

That November, Gehring used a greens aerator to core the main field. After dragging the cores he overseeded with a mix of 50 percent perennial ryegrass and 50 percent Kentucky bluegrass using an Olathe drawn open-spoon aerator, mow and trim. After the fields are aerified, they are fertilized and overseeded. One crewmember spends the majority of his time moving a Larchmont water cannon from field to field.

Every summer Gehring renovates three or four fields. "We spray the fields with Roundup to kill the existing turf," he explains. After a week a contractor regrades the fields to restore a crown and to smooth out all the bumps and depressions. The fields are then fertilized, slice/seeded with turf-type tall fescue and irrigated with the water cannon.

"This renovation is planned and budgeted way in advance," says Gehring. "It's all part of the long-term maintenance plan." Once the fields are renovated, they are put on a higher level of maintenance, including regular aeration, frequent mowing, insect control, overseeding, irrigation and additional fertilization.

The Columbus suburb prides itself on the fact that more than 60 percent of the students participate in the athletic program, explains Gehring. High participation combined with new sports and rapid growth are putting tremendous pressure on the school system to provide safe fields. "Two years ago, I was concerned that some of our fields were unsafe," admits Mousa. "I no longer have that concern. By hiring a turf specialist and putting all fields and playgrounds on a maintenance and renovation cycle, we have regained control over field safety."

The school system, area sports leagues and large industry in Worthington have formed a Community Recreational and Sports Facilities Board to plan for the future. School Superintendent John Hoeffler has asked the board to explore the feasibility of building one central multi-purpose facility to serve three neighborhood high schools. Three new elementary schools are currently under construction and a second high school is on the drawing boards. "The next few years will be extremely challenging. It won't be easy, that's why school sports turf managers need to get together with each other and with school administrators to discuss solutions. Expertise and communication paved the way for major improvements of sports facilities at Clovis, CA, Unified School District. Three people cut through much of the usual school bureaucracy to make it happen. Superintendent Floyd Buchanan has built the central California school system into an aggressive competitor both academically and athletically, gaining notoriety and power in the process. Fred Couch is the director
of construction, maintenance and engineering for the district. Sal Genito is the school system's grounds supervisor who has degrees in both landscape horticulture and public administration and experience in college level sports turf management.

When Genito was hired three years ago, he started out by proving his skills to Couch. He renovated the practice football fields at both high schools and the baseball stadium. The common bermudagrass fields were heavily aerated, low areas were filled in and more than ten acres were overseeded with common bermudagrass seed. Genito instituted a three-application fertilization program and increased the ratio of potassium in the fertilizer for better wear tolerance.

After repairing and adjusting all irrigation heads and timers, he instructed the mowing crew to use only reel mowers on the baseball and practice fields and to cut the common bermuds at one inch. He applied Roenstar in January to control crabgrass and again in August to prevent annual bluegrass germination. MSMA was applied in the late spring to control Dallisgrass.

Positive comments about Genito's work filtered up to Buchanan. "The key is to prove yourself to the administration first," Genito points out. "Once you have a success under your belt, people will trust your judgement." He was ready for his first big request.

A new drainage network was installed at Lamonica Stadium to replace older, plugged up system. Note the interceptor drains at the base of the stands.

Using his public administration education, he put together a proposal on renovating the field in Lamonica Stadium. The football field suffered from poor drainage. Genito used a series of slides to illustrate the problems with the field and listed three options for correction, ranging in price from $500,000 to less than $20,000.

Couch, impressed by Genito's abilities, encouraged him to work directly with Buchanan on stadium matters. "Dr. Buchanan takes personal interest in the sports program at Clovis," says Genito. "His enthusiasm is contagious. It takes the emphasis off budgets and places it on performance. His staff goes the extra mile to make the most out of what it has. If there is a money problem, he finds a way to solve it quickly. It's that kind of cooperation that gets things accomplished at Clovis."

The stadium drainage problem was the result of three things; the crown in the center
of the field had been packed down by years of play, the old drain lines were plugged with silt, and all the rain falling on the new concrete bleachers was draining down onto the playing field. Using school district equipment, Genito and his crew stripped off the old sod, regraded the field to a one percent slope from the center to the sidelines, and installed a 30-foot-wide network of wrapped perforated tubing on both sides of the field. The drainage trenches were backfilled with sand. Finally, Deco Drain was installed between the base of the bleachers and the field.

The entire field was treated with Vapam fumigant to kill weeds, insects and fungi in the soil. Santa Ana hybrid bermudagrass sod was the largest expense of the project. It was washed to reduce the chance of soil incompatibility between the sod and the new root zone. Once installed, the sod was topdressed with a heavy layer of sand. Genito planned to follow up with a program of regular aeration and sand topdressing. The final cost of the project was under the $20,000 estimate.

Every two weeks during the season the stadium field is fertilized with one half pound of nitrogen in the form of ammonium sulfate in addition to bimonthly applications of slow-release IB-DU. “I use ammonium sulfate and flowable sulfur to counteract the effect of the irrigation water which has a pH of 8.0,” he explains. One month before the first football game, Genito applies iron in the form of Ferromec.

Ironically, when the season is only weeks old, the Santa Ana is overseeded with 30 pounds per 1,000 square feet of perennial ryegrass. Every following week during the season another ten pounds per 1,000 square feet of ryegrass is broadcast over the field. Instead of using a germination cover, Genito sprays the field with green paint (Instant Green) to help warm the surface, encourage germination of the ryegrass and conceal the bermudagrass as it becomes dormant and turns brown.

After working so hard to establish the perennial ryegrass, Genito ends the season by killing the cool-season coverup with Diquat. The herbicide does not harm the dormant Santa Ana, but kills all the actively growing weeds and the ryegrass. Many sports turf managers have reported problems bringing overseeded bermudagrass out of dormancy in the spring when ryegrass is still present.

Clovis has made a sizeable commitment to turf care. Genito has a crew of 35 to maintain 400 acres. He has two full-time mowing crews, one irrigation crew and one spray crew. He would like to centralize the school district’s many irrigation systems with a computerized controller. “The important thing is to get control over what we have now because the school has three more schools and two stadiums planned for the near future,” Genito states. Both of Clovis’ high schools have been using Lamonica Stadium. A third high school with a 15,000-seat football stadium and a 5,000-seat baseball stadium is being designed. An elementary school and a junior high school are also planned.

While some school systems are expanding, others are consolidating facilities to stretch budgets as far as possible. In either case, pushing recreational facilities to the maximum requires higher maintenance levels. Those schools that either can’t afford to hire a full-time turf expert or face labor union restrictions, can still obtain important advise and service from sports turf contractors.

Sports turf contractors usually enter the picture by providing services not handled by existing grounds crews. These services may include reconstruction, renovation with specialized equipment, or application of pesticides requiring a licensed applicator.

Roy Zehren, president of Natural Athletic Turf Co., Mequon, WI, has served a large number of schools in the Milwaukee area for more than 15 years. His primary work is reconstruction and renovation. “There is no quick cure for a bad field,” advises Zehren. “You have to start with a well-built field and maintain it consistently. Even a rebuilt football field will fall apart if you wait until May to start getting it ready. You may save a few dollars in maintenance in the spring, but you risk the cost of repeated reconstruction. Once a commitment is made to proper construction, an equal commitment needs to be made to maintenance.”
Zehren contends that a properly constructed football field can withstand between 30 to 75 games during the season if maintained by someone knowledgeable.

Maintenance of a football field should start in March and go through November stresses Zehren. Never let the turf go into drought stress or dormancy in the late spring or early summer. Aerate at least three to four times every year, including once at the end of the season. Fertilize at least four times each year to provide four to six pounds of nitrogen per 1,000 square feet in addition to potassium, phosphorus and micronutrients as indicated by soil testing.

Overseed either at the end of the season or in the spring with a mixture of 75 percent improved Kentucky bluegrasses and 25 percent perennial ryegrass. Mow at least once a week throughout the growing season at between 2 and 2 1/2 inches. One month before the season starts, begin lowering the height of cut gradually to 1 1/2 inch. Once the turf is dense, weeds will be less of a problem. "On good fields you can generally get by with an application of Trimec every other summer," he states.

For roughly $2,000 per field per year a school can hire a contractor to take over fertilization, overseeding and aeration. "Hire someone who does it for a living and stop taking the advise of self-appointed experts," Zehren pleads. "Remember the practice field(s) gets more abuse than the mainfield."

Roy Griffiths, owner of Sportsturf East, in Laurel Springs, NJ, handles everything but mowing for nine school districts in New Jersey and southeastern Pennsylvania. The former Scotts tech rep handles all fertilization, aeration, topdressing, overseeding and weed control. He also maintains three municipal golf courses and serves as the turf consultant for the Philadelphia Eagles and J.F.K. Stadium in Philadelphia.

"The whole thing with football fields comes down to a year-round maintenance program done by skilled people with the right equipment, seed and chemicals," states Griffiths. For less than $2,000 per field per year a school can get professional help from April through November. "They don't have to buy equipment to use just three or four times a year. Instead, we encourage them to spend that money on irrigation. The drought two years ago made a lot of schools realize how important automatic irrigation is. These permanent systems deliver water to important turf with the least amount of waste."

"Landscape architects and landscape installation contractors often don't adequately consider maintenance," says Griffiths. "Schools spend thousands of dollars on reconstructing fields when they wear out and get very little advice from the architect or contractor on how to maintain them. That leaves the mower operator with the job of guarding this investment with very little information."

"I got into the business because as a salesman with a turf education I saw the dilemma schools faced maintaining their fields," Griffiths recalls. "They use products and do things without knowing why. It is also hard to find someone who is directly responsible for the condition of the fields. Many times the person who cares the most about the fields has no authority to make changes. Salesmen will tell you how hard it is to sell a product to a school. That hasn't changed."

Griffiths' 23-year-old son, Michael, joined the company after graduating from Rutgers University with a degree in turf management. "A turf education is more important than most people realize," says his father. "It gives you the reasons why things work the way they do. For example, everybody understands that aeration relieves compaction and improves drainage. What they may over-
look is that once you put down a preemergence herbicide, aeration will destroy the chemical barrier in the soil and allow crabgrass or annual bluegrass seed in the soil to germinate. As a result, we don’t aerate until the fall.”

“Since the drought, Griffiths has incorporated wetting agents into his program. He had gotten results using them on golf tees and greens and saw their value for sports fields. “They improve drainage almost immediately and eliminate dry spots,” he explains. “You can waste a lot of water trying to green up dry spots when most of the turf has all the water it needs.”

Gene Howe, owner of Sportsturf Northwest in Redmond, WA, performs all maintenance for school athletic fields on a contract basis. “One of the reasons sports turf management has improved lately is the development of specialized equipment,” says Howe. “Schools usually have equipment and personnel capable of maintaining the general school grounds, but they fall short when it comes to athletic fields. By contracting out the athletic fields, they are relieved of the cost of equipment, the salary of a knowledgeable turf manager, and the poor quality of fields maintained like the rest of the school grounds.”

The former park director has the Seattle Seahawks practice facility as one of his accounts, puts his emphasis on renovation. “Reconstruction is an expensive process that many schools and parks can’t afford,” he points out. “The technology exists today to correct drainage problems and amend the field soil over a few years without reconstruction. But, the equipment required to do things like deep aeration, slit trenching, dethatching, spraying, topdressing and slice/seeding is expensive and takes skill to operate. By providing and operating the equipment, we can do a better job at a lower cost.”

Howe prefers to do all maintenance, including mowing, on a schedule designed to keep the field healthy all year long. By controlling both renovation and maintenance, he knows the field will withstand heavy use year after year without the cost of major reconstruction.

Still, Howe sees a problem with school
funding of grounds expenses. “Schools appear to be able to obtain funds through levies or grants for one-time construction projects, but it is hard to obtain special funding for ongoing maintenance,” he states. It may be possible for a contractor to help a school maintenance director obtain donations from booster groups or grant programs because he submits a bid similar to a construction company.

Howe’s counterpart in the Northeast is Kevin McCarthy, president of the Greenway Company in Peabody, MA. The ten-year-old company provides many New England school districts with contract renovation and maintenance. McCarthy started out by doing contract chemical spraying for golf courses and a few sports fields. Many of the pest and nutrition problems he was hired to correct with chemicals were the result of poor drainage and compaction. To provide a solution to these problems he purchased a few pieces of specialized equipment and added an athletic field renovation service.

Today, McCarthy can take a compacted, worn-out field and complete all work to bring it back to life in two days. He can break up the soil to a depth of ten or more inches, install slit-drains, grade, fertilize and seed in that short time with only two people because he has the specialized equipment. From there, he can take over all or part of the maintenance to keep the field in shape.

Servicemaster Industries Inc., of Downers Grove, IL, has been successful improving football and athletic fields at more than 160 public school districts throughout the country with its contract management service. By utilizing the existing school staff and equipment, an on-location Servicemaster manager can take over the management of custodial, maintenance and/or grounds services. A computerized management program developed through experience with hundreds of schools and corporations provides the school with proven methods of meeting their maintenance needs. The company then implements training programs and provides technical support through its main office in Downers Grove.

“We currently maintain more than 1,100 school athletic fields across the country,” says William Bedrosian, corporate director of grounds. “Our job is to take a school’s grounds budget and spend it in the most effective way. We do that by instituting an inspection program, have our turf specialists put together a maintenance program, and then train the existing staff to do the work. If a school needs special equipment, we may either recommend they purchase it, or we’ll locate a sports turf contractor with the equipment to do it on subcontract. If the school turf manager has a problem, he can call our technical support staff for the answer. It’s really a combination of proven management methods, technical support and supervision.”

The company does things that help schools set priorities, use labor most effectively, adjust maintenance practices and keep track of progress. In addition to training, the company provides school grounds managers with a comprehensive grounds management manual. “The important point is that it’s a waste of time and money for every school to reinvent the wheel in sports turf maintenance,” says Bedrosian. “Our most important program is what we call preventative maintenance. Certainly one of the things we are trying to prevent with sports turf is injuries.”

Schools across the U.S. spend millions of dollars each year on uniforms, salaries, equipment and supplies for football and other turf sports. Every penny of this is at risk without year-round attention to the turf by a knowledgeable turf manager. School administrators, concerned about student population growth, increasing use of a limited number of fields, and their school’s liability in the event of injuries, have a choice of ways to provide the attention needed to keep fields safe. They can hire an experienced and well-educated turf specialist, sign a contract with a qualified sports turf contractor, or assign the task of managing athletic turf to a company like Servicemaster. Regardless of the choice, it is clear that sports turf must be given a higher priority within the maintenance structure of school districts.