



Snow is plowed off tarps using rubber-bottom blades.

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Using Tarps To Improve Winter Playing Conditions

Hard-core football fans over the age of 35 still remember the 1964 National Football League Championship game between the Cleveland Browns and the Baltimore Colts in Cleveland Stadium. How could they forget that frigid December day when Browns quarterback Frank Ryan used running back Jim Brown and ends Paul Warfield and Gary Collins to beat the Colts led by Johnny Unitas? It was a contest between giants with nature adding to the difficulty of an already physical sport.

More than 80,000 fans watched the Browns prevail on the frozen field, whipped by winds off Lake Erie. Film of the contest shows how players tested their strength and balance to keep their footing on the dormant Cohansey bentgrass. There wasn't much that groundskeeper Emil Bossard could do to keep the turf growing in the heavily shaded outdoor stadium past October. It was challenge enough to keep the field in shape for both football and baseball. When the temperature fell below freezing and the snow started falling, only experience told Bossard what he had to do to fool Mother Nature.

Mud was an accepted part of the game back then. Teams scouted for players who ran well in the mud. Obviously the Browns had found better "mudders" than the Colts—and proved it by winning the Crown, 27 to 0. But Art Modell, owner of the Browns, wanted to change that. He was determined that someday professional football would have the same standards for turf

as baseball despite the extra challenge of playing during the fall.

Bossard and other experienced northern groundskeepers did their best to keep rain and snow off the fields in the season with tarps. The best they could hope for late in the fall was to keep ice and snow from hiding the lines and making the field slippery. A clean, frozen field was better than a wet, thawed field.

During the '60s, those who shared Modell's hope for better winter playing conditions devised a number of alternatives for the NFL. The three most notable were artificial turf, sand-based natural fields and indoor, domed stadiums. The price tag for all of these was substantial compared to conventional fields constructed with native soil. Stadium managers pondered long and hard before making such large investments without some guarantee that the new fields would pay for themselves over time.

When Modell's Stadium Corp. took over management of Cleveland Stadium in 1974, this tough decision became his to make. The Bossards had an excellent reputation across the country as "turf doctors." They gave Modell time to evaluate his field options.

Today, David Frey is the individual whose job it is to fulfill Modell's expectations when it comes to the turf at Cleveland Stadium and the Browns' two training centers. Frey was hired by the Browns' in 1982 as a consultant during construction of the team's summer training center at Lakeland Com-

munity College in Kirtland, OH. Larry Staverman, vice president of Stadium Corp., asked Frey to help out at the stadium as well. "It developed quickly into a full-time position," says Frey.

He grew up around golf courses and athletic fields as the grandson of Sidney Dryfoos, a distributor of professional turf products in Northern Ohio since the '20s. While his formal education is in business administration and biology, his experience is all turf. "My dad used to take me with him on troubleshooting calls when the main thing turf managers wanted from a distributor was service," recalls Frey. "They needed advice when it came to the use of chemicals, and expected you to be right. If you were wrong, you lost a customer."

After college, Frey joined the family business. This was in the first years of the new pesticide act. Applying chemicals carried with it a new degree of caution. Older pesticides were being replaced with newer, more problem-specific pesticides. "It was tough trying to explain to turf managers why they needed to do things differently when they had a successful system going for years," Frey says. "It wasn't just a matter of curing symptoms anymore. You had to rethink everything . . . the plant, the chemical, the soil and the cost. There were more options available for most turf problems if you thought the situation through."

Frey utilized this analytical approach as a consultant for Cleveland Stadium. "The

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thing about stadiums is you aren't just a turf manager, you have to make it a point to learn what the owners, coaches and players want—and then build your turf program around it," he remarks. "This is a business, not an arboretum. You have to work things out when you have a rock concert, baseball game and football game all in the same week. It may not be easy and it may not be the best thing for the field, but you have to find a way to pull it off."

From the beginning, Frey experimented constantly to keep the turf responsive later into the season. He started pregerminating perennial ryegrass, topdressing with a mixture of sand and soil, aerating heavily, and protecting the field with new geotextile covers. He even constructed an air-supported greenhouse over the center of the field to trap heat and keep the Kentucky bluegrass and perennial ryegrass growing.

After Frey has spent a year as a consultant, Staverman asked him to join Stadium Corp. as director of field maintenance. The event schedule was one thing, but Frey had his eye on an even tougher challenge: a quality playing surface in sub-zero temperatures and snowy weather conditions.

"For years, various methods were used to preserve the playing surface in extreme winter conditions," he recalls. "Several parks used a combination of 40 tons of hay

and tarps to insulate the ground. Other parks pumped heat under tarps. The problem with these two methods was the thawing of the top several inches of turf resulted in collection of moisture under the tarps. This moisture turned to ice when they were removed at game time, turning the field into a skating rink.

Many times the heat of the day on a covered field would thaw it, bringing moisture to the surface. If it was extremely cold on game day, the tarps would freeze to the ground and could not be removed. Several times in Cleveland, the tarps were frozen so badly they had to be mechanically removed, destroying them beyond repair."

Some of the newer fields have electric heating cables or hot water piping to warm the surface. These systems are definitely an improvement. They extend the growing season and can melt the ice and snow except in extremely severe weather conditions."

Part of the problem is scheduling, explains Frey. In the old days, after a game the turf manager repaired divots, cleaned up the field, marked it, and covered it until the next game. A field could stay covered for nearly a week since it took more than 20 people to remove the tarps before a game. The turf manager had to cover the field when he had the people to do it. He didn't want to leave it uncovered in case it snowed or rained.

Not only does a covered field collect



Six men can remove tarps with the help of a tarp machine developed by Frey.

moisture at the surface, it prevents the use of pregerminated or interseeded perennial ryegrass. It blocks sunlight turf requires for photosynthesis. The turf may not be growing above the surface, but it does produce carbohydrates and store them in the roots in late fall. These carbohydrates are important for winter survival and spring recovery. Frey thought the turf should be exposed to sunlight whenever possible.

He is looking at geotextile materials that act like a blanket over the soil without trapping moisture. Of course, they don't keep rain and snow off the soil either, but they would be useful during cool, clear weather in the fall and winter.

"You can't stop maintaining the playing surface when the grass stops growing," explains Frey. "You have to keep the surface in condition, and that goes for artificial turf too. You can't just paint, cover and walk away until the next game. You can't afford a surprise when you lift the tarps before a game."

Frey knew he had his hands full. The median winter temperature in Cleveland is lower than in any other non-domed NFL city, with the exception of Chicago. He set about developing a program to keep the field dry and healthy in December and for playoff games.

His first target was the soil. The field has a clay base with a sandy-loam top mix. The turf is a mixture of Kentucky bluegrass and perennial ryegrass. The Cleveland crew topdresses the field with a dry, sized sand before each game, to tighten the turf and create a little cushion for the crowns of the plants, explains Frey.

"Like freeze-dried coffee, the sand will not stick together when it is dry. The result is a loose, sandy surface that will not freeze in sub-zero temperatures. It accepts spikes and is playable, since the sandy loam is just below. The only negative side effect is the

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possible desiccation of the plants."

The crew protects the field from rain and snow. "Our winter weather and air moisture will not allow for extensive drying," states Frey.

"Anyone who has uncovered a field in below-freezing temperatures can relate to the frost that is found on the underside of the tarp. We simply uncover parts of the field on clear, cold days by folding the tarp in halves or thirds. This lets the frost vaporize into the air. After each section of the tarp is dry, we put it back down and wait for the frost to reaccumulate. This procedure is repeated, pulling additional moisture off the surface."

Frey calls this process freeze-drying. "Once the sand top surface is dry, it will not freeze. When we uncover the field before a game, the turf is dry and frost-free."

All snow is removed from the tarps with special rubber-bottom blades mounted on four-wheel-drive Ford tractors. Four tarps made by Covers Unlimited of Cleveland cover the entire field. They are joined together with Velcro seams that prevent moisture from leaking through. "A tarp with holes or leaking seams is worse than no tarp at all," says Frey. The special snow blades do not hurt the tarps.

To cut the manpower required to handle the tarps from 22 to six, Frey built a tarp machine. This tractor-mounted unit rolls the tarps onto hollow metal cores so that they can be moved and stored below the stadium. "We can cover or uncover the field with six guys in about 45 minutes," he boasts. "So we can cover or uncover the field any time we want to without adding extra crew. That allows us the flexibility we need to keep the field dry."

The National Football League has taken steps to improve field quality during the winter. In 1981, the NFL required stadiums that also host Major League Baseball teams to sod the infield dirt at the end of baseball season. This has increased the use of thick-cut sod to cover the infield dirt and tracks used for portable stands.

In 1983, the NFL mandated that all outdoor fields be covered the night before games if there is any chance of rain or snow. As a result, outdoor stadiums must have tarps and the necessary crew and/or machinery to put them down the day before a game. Artificial surfaces and Prescription Athletic Turf (PAT) fields are not excluded from these rules.

Stadium turf managers today are aware of the benefits of covers, fall fertilization, iron, aerifying fields to improve drainage, topdressing, and using pregerminated perennial ryegrass and thick-cut sod. "We don't use as much green paint as they did in the old days," reveals Frey, "because the turf is in better condition. When we get into December and January and the turf is dormant, paint makes a big difference. But you still have to manage the soil moisture."

This summer, Frey had Ohio State University do extensive tests on the soil at the stadium and the two training centers.

The goal is to develop a soil mix that encourages rapid, deep rooting of both sod and overseeded ryegrass. "With both baseball and football, we don't have time for incompatibility problems," says Frey. "We have to match the soil on the sod with the soil on the fields as closely as possible."

During football season, Frey talks every morning to Coach Marty Schottenheimer to find out his needs. "Marty understands turf and moves workouts around to spread out the wear on the practice fields," says Frey.

This winter will be especially important for the Browns after a rash of injuries early in the season, including quarterback Bernie Kosar. As temperatures fall below freezing,

the field will have to be firm and provide the traction the team will need to make the playoffs.

"Playoff time has a special meaning, not only to the Browns, but to the whole city—and especially to our stadium ground crew," adds Frey. "It is the ground crew's time to shine. It is a great challenge for them to be able to provide a playable field with good footing in very adverse weather conditions."

Modell is a "grass man" who believes higher standards can be met in northern climates with natural turf. If Cleveland ever does replace its lakefront stadium with a dome, you can bet Modell will try to make it the first indoor stadium with natural turf. ☺

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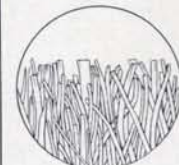
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