

CHALKBOARD

TIPS FROM THE PROS

VIBRATORY PLOW PULLS MULTIPLE DUTY AT SEA PALMS

Golf course superintendent Maurie Shields remembers when aerating fairways was a difficult operation. "It was like playing Russian roulette with a cartridge in all six chambers," he says. "When we tried to aerate we'd cut into our hydraulic sprinkler control lines and really complicate our lives."

Shields oversees three nine-hole courses at Sea Palms Golf and Tennis Resort, 90 minutes south of Savannah on St. Simon Island, GA. Built in the late '60s, the courses have aged gracefully, but their old irrigation systems have not.

The problem was three-pronged. First, there was an inadequate water flow and pressure supply. While irrigation lines of new courses step down from at least eight inches to a three-inch diameter between the pump and the heads, the Sea Palms system went from four to two inches. Shields' crews solved this problem by tying the systems together, so they could assist each other with supply and pressure.

Another problem was unmanageable water distribution. Because of numerous repairs over the years, the system could not be properly managed. There were too few controllers, deteriorating controllers, field controllers without pump starting capability, and poor power supplies. Management could not control the systems centrally, and could operate only one watering program at a time. The units required a tremendous number of man-hours to reprogram for changing weather conditions and normal course maintenance.

One of the biggest problems was the fact that the control hoses on 16 of the 18 holes were buried only three inches beneath the surface. As hoses deteriorated, replacements were added at the same depth with a sod plow.

"We couldn't aerate, and that affected just about everything we attempted to do on the course," says Shields. "Water percolation, drainage, fertilizer, and pesticide penetration all were hindered because we couldn't aerate the fairways. When you add soil compaction due to the play—we had 8,000 golfers on the course last March alone—you magnify the problem to extremes."

Faced with these problems, Shields and his crew made plans to correct them. After recalling that an outside contractor had charged \$12,700 to redo a hole the year before, an amount that would exceed \$228,000 for 18 holes, they opted to do the job themselves. To do this, they acquired a Ditch Witch Model 350sx vibratory plow.

Most of Sea Palm's fairways are lined with large oak and pine trees which send radial roots out beneath the fairway and rough surfaces. Shields and his crew learned that roots extended well beyond the centers of at least two 60-yard-wide fairways. These roots were soaking up water and nutrients and causing the undernourished grass above to yellow. This was a particular problem under oaks in the spring, when developing leaves demanded a great amount of moisture from the root system.

Plowing-in all new control lines gave Sea Palms an opportunity to redo sprinkler and controller locations.

Course management began to realize the extent of their root problems when they saw their aerating equipment pull up solid, five-inch-diameter wood cores out of the greens. In some places, the growing roots had expanded beneath the concrete cart paths, buckling them and requiring seven-dollar-a-foot replacement patches.

One day, as a Sea Palms employee was pulling small-diameter pipe underground behind the thin plow blade of the Ditch Witch 350sx, Shields observed how easily the blade sliced through the roots. He realized they could intentionally trim roots with the plow.

If they trimmed them at or beyond the trees' drip lines, to only a foot beneath the surface, the trees themselves would not be harmed because most roots would be left intact. The trimming would suddenly eliminate competition between the severed roots and the grass under which they lay. Shields promptly instituted an underground tree-trimming program for fairways and roughs, tee and green slopes, and cart paths.

"It helped a great deal," Shields reveals. "Tying our systems together and increasing the number of sprinkling zones increased our sprinkler throw by 10 to 20 percent. And that let us water the rough, too. Trimming the roots helped change a spotty, yellowing

rough into a lush and inviting one."

The 3/8-inch wide plow blade slit was barely visible. By crabbing the four-wheel-drive trencher so its right-side wheels rolled over opposite sides of the cut, the machine operator packed the dirt so that the cut became almost invisible. Rain and grass growth eliminated it completely within a few days.

Sea Palms management solved its shallow control-hose problem by using a different plow, this one with a two-inch-wide chute into which up to 12 or more 1/4-inch hydraulic control lines would fit. The plow buried the lines well below the depth of aeration equipment penetration.

The burying job was facilitated by a homemade reel carrier frame, set on a truckster bed, which held up to 21 reels of hydraulic hose and electrical wire. They are color-coded according to use, green or fairway heads, and for easy identification during hook-up. Spare tubes also were included to solve future problems. The carrier was driven ahead of the vibratory plow, and its bundle of hoses and wires was fed into the plow chute by an employee walking next to it. More than 200,000 feet of hydraulic line was used in the project.

Plowing-in all new control lines gave Sea Palms management an opportunity to redo sprinkler and controller locations and functions. In some cases green and tee controllers were switched to control fairways, and green and tee box heads were controlled with satellites. Breaking into smaller zones allowed better and greater coverage from the heads.

"One station watered one green before," explains Shields. "But since the elevated back of a green needs more water than its front does, we broke each one down into two zones."

Some new controllers were added so that the operator of each controller could see all its sprinkler heads work from that location. Before, the operator sometimes checked another fairway, found no one on it, and turned the remote controller on, only to find out late that a golfer had been sprayed.

Shields looks back at the project with satisfaction. It not only was performed at a fraction of the potential cost, but it has also given him more controls and a new aeration capability. The crew performed the work according to their own schedule. By doing it themselves, they were never down for more than 24 hours. They usually did one controller at a time, while they irrigated and operated throughout the whole project.