

Gassing and Regrassing

by **TOM WALKER**

Golf Course Superintendent, Inverness Club, Toledo, Ohio

EXCEPT FOR a few holes, the current golf course of Inverness Club, in Toledo, Ohio, was designed by Donald Ross in 1919. It has enjoyed a long and illustrious reputation, but its putting green quality became increasingly difficult to maintain during the 1980s.

Clearly the club had reached a crossroad. Fortunately, a positive solution was eventually reached, and this is the story of the problems and their solutions.

Surprisingly enough, Inverness Club has had only three superintendents, and

consequently the greens soil profile has remained free of the layering problems that often accompany frequent changes in topdressing materials.

The greens were originally seeded with South German mixed bentgrass, and over the years the various varieties became segregated and produced a turf with a patchy appearance. These different grasses, of course, reacted differently to different weather conditions and pesticide applications, and this further contributed to their patchy appearance.

Poa annua contamination also became a problem, causing the greens to

be inconsistent day to day and green to green. More importantly, their *Poa annua* content made them increasingly unreliable.

For all of these reasons the club began to consider extensive changes.

Inverness has always been a strong supporter of the USGA and its Green Section, and after lengthy consultations with USGA agronomists and several university personnel, the club considered various options.

After discussing the problem, the club decided to regrass the existing greens rather than rebuild them from

Covers in place following seeding in August, 1988.



scratch. This idea was well received by the club membership, which was extremely concerned about preserving what is left of the original Ross design. Regrassing was a particularly viable alternative, since the old soil greens had always drained well. In addition, the undulations on the greens, for which the club has long been noted, provided excellent surface drainage.

Cost was also a consideration, since the estimates for reconstruction were in excess of \$400,000, while the regrassing estimates were only \$40,000. Obviously, the changes being considered were monumental, and the club wanted to be absolutely sure the best option was chosen so that the fundamental problems would be solved while the integrity of the original design was preserved.

In order to gain firsthand information about the merits of regrassing

versus reconstruction, as well as to evaluate the various choices for grass selection, a delegation of club officials visited a number of courses in Indiana, New Jersey, and Delaware. I went along.

As noted earlier, the regrassing program was selected in lieu of total reconstruction. Pennlinks was our choice for putting green turf because of its aggressive, deep-rooting nature as well as its upright growth and fine texture.

Deciding how to proceed with the project was our next step. Proposals included (a) regrassing all 18 greens immediately, (b) doing nine greens one year and nine the next, and (c) regrassing just two greens on a trial basis.

Even though we felt very confident about regrassing all 18 greens at one time, the knowledge that the project would thoroughly disrupt the golf season and that the trial program would

allow us to fine-tune our program led us to choose that method.

August 27, 1988, was our target seeding date for the two trial greens, but rain forced a four-day delay, and the greens were not seeded until September 1st. Because of this delay and because we did not verticut thoroughly enough in preparing the seedbed, germination percentages were not as high as we would have liked. Nonetheless, the finished product turned out extremely well, and the trial was an undeniable success.

The two trial greens were opened on May 31st, 1988, just nine months after the regrassing project had begun. At that time they rolled 8 feet 6 inches on the Stimpmeter.

Armed with this excellent experience, planning began for regrassing the other eighteen greens. The timetable and the scope of the work for the remaining

The finished product eight months later.



greens had been set in October of 1987. It was decided to change the contour of the sixth green and to make minor changes in the fifth green, two holes added by George and Tom Fazio for the 1979 U.S. Open, but no other changes were to be made. August 15, 1988, was our target seeding date, giving us more time for fall grow-in.

Precise planning was essential, since the operation involved several consultants and contractors. Arrangements were made to have extra equipment and parts on hand in the event of breakdowns. Our efforts and planning paid off handsomely, as everything went exactly according to the plan.

Regrading work began on the sixth green on August 1 and was completed by August 7, so that it could be fumigated and seeded along with the rest of the greens. Work began on the remaining greens with an aerification program on August 8.

In order to protect the green contours, we had originally planned to aerify once with the Verti-Drain deep-tine aerifier and twice with Ryan Greensaires before we removed the sod. This turned out to be impractical, however, because the sod broke into small

pieces and was difficult to remove. To speed the process, the sod was removed after using the Verti-Drain but before aerifying with the Ryans.

Following core removal, a contractor then moved in and performed methyl bromide fumigation on August 10 and 11. After 48 hours, the plastic tarps were removed, and the greens were allowed to breathe for an additional 24 hours. Seedbed preparation began by verticutting to a depth of $\frac{3}{8}$ inch in four directions. Finally, the greens were carefully raked to preserve their original contours.

After a light irrigation, the soil surface was raked again, and $\frac{1}{2}$ lb. N/1,000 sq. ft. was applied using a 10-18-22 predominantly soluble fertilizer. This material was incorporated with another light raking.

Pennlinks creeping bentgrass seed was applied with drop spreaders in two directions, each at $\frac{5}{8}$ lb./1,000 sq. ft. Granular metalaxyl (Subdue) was applied to control *Pythium*, and the seed and fungicide were incorporated with a final raking. Great care was taken to erase all footprints to produce a perfectly smooth putting surface.

Geotextile covers were placed over the greens to prevent erosion during the germination and establishment phase. They were not easy to install without disturbing the seedbed, and 15 people were required to float them over the green, much as you would a parachute. To illustrate the value of the covers, 1.75 inches of rain fell the night we seeded the greens, and even though some minor erosion occurred, it was far less than would have occurred had the covers not been used.

Soil thermometers proved to be invaluable, since soil temperatures can be as much as 20 degrees warmer under a cover in the sun than in the shade. Temperatures were monitored closely, and when they rose to 90 degrees or higher, one-minute syringe cycles cooled them.

The covers were removed after five days, and were replaced only when rain threatened. There was no danger of erosion after three weeks, and the covers were not used again until winter.

The first mowing occurred at 14 days, and by 21 days the greens were being mowed three to five times a week at a height of $\frac{1}{4}$ inch. Two weeks after seeding, soluble 10-18-24 fertilizer was used at a rate of $\frac{1}{4}$ lb. N/1,000 sq. ft. on a four-day cycle. Eventually, the fertilization program evolved such that weekly applications were made at a rate of $\frac{1}{3}$ to $\frac{1}{2}$ lb. N/1,000 sq. ft. By late October, 4 lbs. N/1,000 sq. ft. had been applied, and growth and development were excellent.

Fungicides were applied as needed on a 14- to 21-day cycle, and three light topdressings were made in the fall. The geotextile covers were replaced in late November and were kept in place until March.

As of April 12, 1989, just eight months after seeding, cutting heights have been lowered to less than $\frac{1}{4}$ inch, and the putting green surfaces are quite smooth. Root growth has been exceptional, with roots commonly found at depths of 8 to 10 inches. Opening day is planned for sometime in May, which translates to a total downtime of just nine months.

At this point I could not be happier with our renovation project. It has proceeded beautifully from start to finish. The total regrassing project, including the reconstruction of the sixth green, cost less than \$40,000, one-tenth of the cost of the original estimated reconstruction cost of \$400,000. Regrassing certainly is not a viable alternative in every situation, but it has worked wonderfully at Inverness, and at a much lower cost.

Vigorous root system of Pennlinks creeping bent after eight months.

