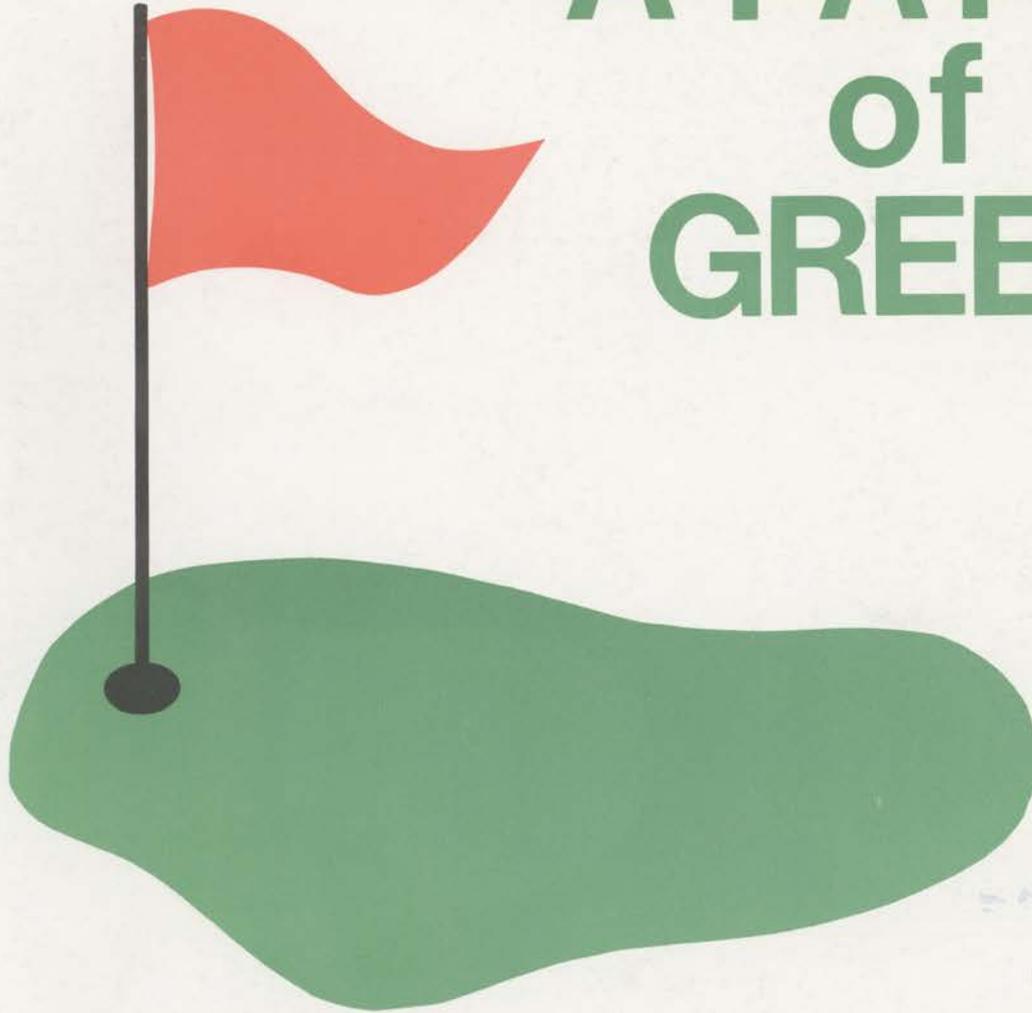


January/February 1989

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PRESIDENT'S MESSAGE

HAPPY NEW YEAR!

With the holidays behind us, it is a chance to look into a new year with new goals and opportunities.

Reflecting back to 1988, I'd like to thank Clem Wolfrom for hosting our Christmas Party at Detroit Golf Club. There was a fine attendance of 162 which was the largest yet. Also thank you to Ed Heineman and his wife Bobbie who were the Chairmen.

We had a great Michigan Turfgrass Foundation Conference in Lansing. Thanks to Fritz McMullen for a job well done in setting up the conference. There were 960 who attended this year.

As the new year begins, the Michigan Turfgrass Foundation will be starting a survey to all in the turf industry. We feel this survey is very important to the turf industry. Both to answer some questions and to get your opinions. So please be supportive of the survey and take the time to complete and return it with your support.

Our meeting schedule looks very good this year thanks to Education Chairman Ken DeBusscher. Looking forward to seeing everyone at those meetings. The schedule will be published in the near future.

To a great 1989 -

Sincerely,
Charlie Gaige,
President, MBCGCSA



FEBRUARY 28 - MARCH 1, 1989

Northeastern Pennsylvania Turfgrass and Grounds Maintenance School, Luzerne County Community College, Prospect Street & Middle Road, Nanticoke Pennsylvania. Contact: William Pencek, Lackawanna County Extension Service, 200 Adams Avenue Scranton, Pennsylvania 18503. (717) 963-4761.



"A PATCH OF GREEN"

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Despite the busy season, and at times a difficult season, we were given ample opportunities to study and learn about the problems we were facing and their solutions. Not all events were educational but all were experiences that help man cope with the trials and tribulations of "Man Against Nature".

January found us at Bay Pointe Golf Club to discuss our political feelings about the National Meeting. Later we traveled to the Michigan Turfgrass Foundation in Lansing.

February was the trek to Houston and the Annual GCSAA Convention.

March 9 we went to the Detroit Golf Club to share a meeting with the Golf Association of Michigan and on the 7th of March we went to Salt River Bowling and Golf Club for a meeting and bowling.

In April we returned to the Detroit Golf Club to discuss the new Construction projects in which they were about to embark. And on the 27th we crossed the border into Canada to enjoy the hospitality of the Ontario Superintendents at the Beach Grove Golf and Country Club.

May 2 we participated in the fund raiser for the Special Olympics at Indianwood Golf and Country Club where we raised \$3,500.00. On May 23 we went to Twin Beach Country Club for a great meeting and golf.

OPPORTUNITIES OF 1988



GOLF DAY ORGANIZERS

L-R Ken DeBusscher, Jon Maddern and Gary Thommes

The Annual "The Invitational" at Links at Pinewood was held in June raising money for Junior Golf and Turf Research. Other summer meetings were held at Arbor Hills Country Club, Orchard Lake Country Club (where the Annual Golf Tournament for Michigan & Border Cities GCSA was held), and the 2nd Annual Michigan Golf Course Superintendents Championship was held at the Royal Scot of Lansing.

As the season was winding down we went to Kensington MetroPark for the Family Picnic and pig roast (in the rain) and on September 20 we were invited to Canada once again to the great "Nick Panasiuk's" Hydeaway Golf Club for a day of fun and relaxation.

In October, we raised over \$10,000.00 at our Annual Golf Day - Dinner was at Bay Point Golf Club. And on the 18th we were at Maple Lane Golf Club for our Annual Meeting and the annual C.H. Wolfrom Classic Golf Tournament. On the 27th and 28th we hosted a GCSAA Seminar on "Golf Course Restoration, Renovation and Construction Projects" held in Lansing.

And of course the whole season ended with a memorable evening at the Annual Christmas Party held at Detroit Golf Club.

As you can see we are a busy bunch of members. Thanks to all whom made 1988 the great year that it was.



L-R; Newly-elected Director, Steve Kolongowski, Superintendent of Salem Hills Golf Club, Northville, Michigan; Immediate Past President, Kevin Dushane, Supt. Bloomfield Hills C.C.; Newly-elected Director, Jim Eccleton, CGCS, Supt. Arbor Hills C.C., Jackson, Michigan; Director, Ken DeBusscher, Supt. Wabek C.C.; Out-going Director Jim Timmerman, CGCS, Supt. Orchard Lake C.C.; Vice-President, Tom Mason, CGCS, Supt. Birmingham C.C.; Jay DelCamp, Supt. Katke-Cousins G.C.; and President Charlie Gaike, Supt. Lakelands Golf and Country Club. Missing are Directors, Roger Gill (Out-going); Ed Heineman; and Gary Thommes; and Secretary/Treasurer, Jon Maddern.

CHRISTMAS PARTY

The 1988 Christmas Party was held at the Detroit Golf Club on December 9. One of the largest turnouts in recent years came to enjoy an evening of good food, good music and good times.

Host Clem Wolfrom and wife Jan, greeted the guests along with Chairman Ed Heineman and his wife Bobbie.

President Charlie Gaige and his wife Andra, presided over the festivities.



President Charlie Gaige with wife, Andra proudly posing with Bobbie and Ed Heineman, Chairmen of the Christmas Party.



Jim Timmerman presenting a plaque honoring Jim Vlassis as he retires from the profession.



L-R Rosemarie and Gary Thommes enjoying the evening with Carey and Debra Mitchelson.



Janet and Clem Wolfrom, hosts of the Gala Christmas Party and Mary and Ted Woehrle, Editor of Patch of Green.



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Putting green speed can be seen through two sets of eyes, one being the golfer and the other set, the golf course superintendent. As superintendents we are asked to provide the golfers, to the best of our agronomic abilities and budget limitations the range of green speed they prefer, and still maintain a quality putting surface. Since putting is a major factor in a golfer's score the quality and speed of the greens becomes a big concern to the game. And I would like to point out that quality of putting greens is not measured by speed alone. In my view consistency from green to green is as important, if not more, than speed. I think there are many superintendents and golfers alike who agree with me on this point.

Many times, the demands put upon the superintendent to provide ultra fast greens (above 9.5 on the stimp meter) can be detrimental to the turfgrass and the superintendent's employment. As you can probably tell by now I am not a proponent of ultra fast greens and I would like to tell you why.

The golf course can have beautiful natural scenery and breathtaking vistas. The tees can be perfectly level. The fairways can be wide and inviting, the ball sitting up begging to be hit onto the green. And the most important playing area on the course, the putting surface, can be lush and green. But as the ball is putted towards the hole and rolls up just short of falling in for par you may hear from that golfer after his round is over asking if the greens were mowed today or remark the greens are a little slow today. To these comments I might explain that it rained over an inch last night or they slow down a little right after a light topdressing. But I would like to respond in this manner, "Try stroking the ball a little firmer." As long as all the greens, including the practice green, are consistent with a good pace then the golfer must adjust to the green conditions of that particular day. It is not possible to have the same green speed everyday throughout the golfing season. There are too many variables to contend with.

Why do most golfers prefer fast paced greens? Because they generally roll smoother and putt truer. I couldn't agree more because I enjoy putting on fast greens. But there are fast greens and then there are ultra fast greens. The ultra fast greens are what I oppose, both as a golfer and a superintendent. As a golfer, when greens become too fast it takes the skill

out of the game. These ultra fast greens will contribute to slow play. A golfer may be attempting his third putt farther from the hole than his first putt, especially higher handicapped golfers. And looking at it from a superintendent's view extra fast greens put tremendous stress on the turf.

Television played a major role in the birth of ultra fast greens. In the mid to late 70's many golfers viewed the Masters and the U.S. Open not knowing anything about the stimp meter. What they knew about green speed is what they learned on television. Speeds at these tournaments were extra fast. What they didn't mention on TV was these golf courses were peaking the greens at these fast speeds for a one week period. Many golf courses began to pressure the superintendent into producing ultra fast greens. Comparisons were being made with neighboring courses. You may have had one of your members ask, "why can't our greens be as fast as XYZ Country Club?" This would be like comparing apples to oranges. The variables that exist from golf course to golf course are many. Soil conditions, grass varieties, undulations, amount of play, cultural practices such as topdressing and aerification, mowing frequency and budgets are just a few of the conditions that can alter green speed from course to course. Soil moisture, percentage of shade and wind exposure can create speed differences on the same golf course. Golfers cannot expect greens from one course to the next to be the same speed. Our main goal is to provide 18 consistent, quality greens with a good pace.

This is where the stimp meter can be a valuable management tool for the superintendent. Used properly the stimp meter can provide accurate readings of individual greens and this information can be used to keep the greens consistent. For those of you not familiar with this tool, the stimp meter is an aluminum bar 36" long with a v-shaped groove extending along its entire length. It doesn't cut grass or prevent disease but over the past 11 years it has raised quite a controversy. Invented by Edward Stimpson in the 1930's and refined by the USGA Green Section the stimp meter's main purpose is to give the superintendent a tool to control speed and to measure ball roll consistency in putting greens on the course. I polled many superintendents on whether or

CONTINUED PAGE 19

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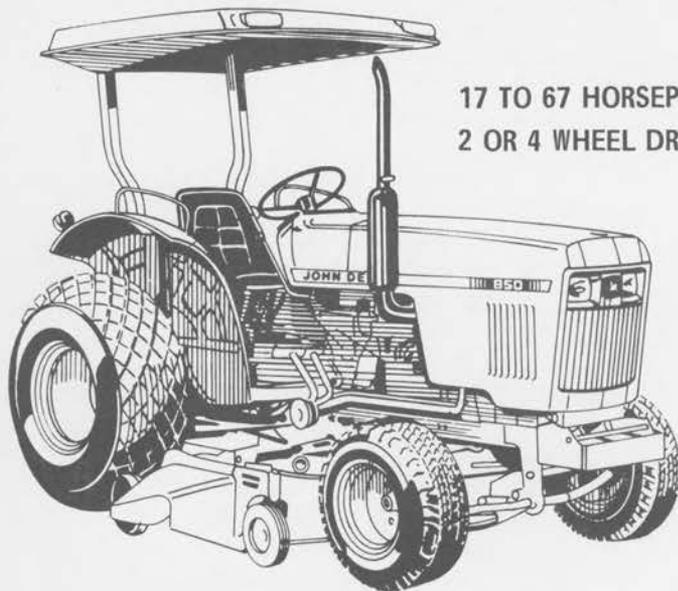
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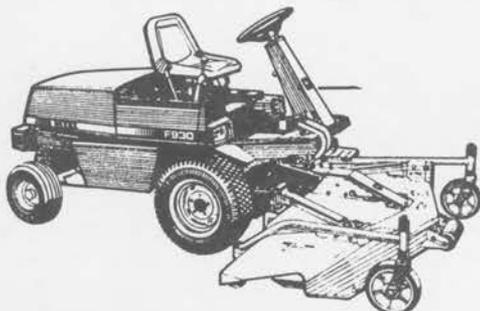
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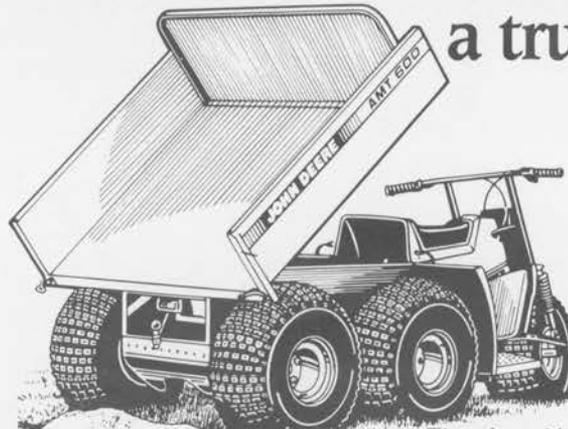
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GCSAA NEWS

GOLF COURSE IMPACT ON WATER QUALITY

FINDING: Golf courses do not pose a significant pollution threat to the nation's water supplies. This conclusion is based on a review of the scientific evidence that is currently available. Neither groundwater nor surface water is threatened by golf course runoff. Further, studies show that stormwater runoff is near zero from golf courses.

GROUNDWATER: About half of all people in the United States depend on groundwater for their drinking water, and the figure is 90 percent in rural areas. Results from ongoing scientific studies show that the use of pesticides on golf courses does not threaten public drinking water. Because of the low mobility and quick biodegradation of most golf course pesticides, they simply do not reach groundwater in significant quantities.

One Environmental Protection Agency-funded study being undertaken on Cape Cod in Massachusetts provides for a "worst-case" estimate of groundwater contamination. To date, test results have been encouraging, demonstrating that golf courses and clean groundwater do coexist.

Some experts argue that golf turf offers uniquely favorable control mechanisms to prevent groundwater contamination. Dr. Stuart Z. Cohen, a former Ground Water Team Leader for the EPA in Washington, notes that "the use of pesticides on golf courses poses less of a threat to the nation's groundwater than does the agricultural use of pesticides."

Additionally, turfgrass provides a "thatch layer" not found in row crop situations. Thatch binds up pesticide residues and increases degradation of some chemicals. Dr. Harry D. Niemczyk of Ohio State University has found that as much as 99% of recovered pesticides are found in turfgrass thatch.

In some areas, golf courses are also helping to mitigate the groundwater pollution effects of hazardous waste sites. Many of the nation's golf courses fertilize soil using sludge compost mixes prepared by urban waste recycling programs. These sludges might otherwise be disposed of in municipal landfills. Thus, potential groundwater leaching from dump sites is averted by careful community planning and recycling.

STORMWATER RUNOFF: Stormwater runoff from golf courses is not a significant environmental hazard. Research conducted by Dr. Thomas Watschke, a turfgrass specialist at the Pennsylvania State University, indicates that thick, healthy turf reduces runoff "to next to nothing."

An average golf course of 150 acres effortlessly absorbs 12 million gallons of water during a three-inch rainfall. Dr. Watschke finds that thick, carefully managed turfgrass has 15 times less runoff than does a lower quality lawn. As a result, almost all of the pesticides applied to the grass remain in place after peak rainfall.

Dr. Richard J. Cooper of the University of Massachusetts argues that turfgrass cover "reduces soil erosion and prevents soil and chemical runoff into water sources."

By comparison, parking lots, streets and even residential areas load nearby waters with hazardous pollutants carried in runoff from road surfaces, gutters and catch basins.

SURFACE WATER: Golf courses help decrease sedimentation pollution of rivers, streams and lakes by preventing topsoil erosion. The major polluter of U.S. surface water is sedimentation from soil erosion. However, turfgrass reduces erosion, as compared to alternative land uses.

For instance, studies show that grassland experiences 84 to 668 times less erosion than area planted with wheat or corn. Construction has an even more devastating impact on topsoil, so golf courses can greatly reduce erosion effects as compared to other land users, like shopping malls or housing developments.

Sedimentation pollution from soil erosion costs society billions of dollars in increased transportation, shipping and cleaning costs. Thus, by preventing soil erosion, golf courses serve a very beneficial societal purpose.

CONCLUSIONS: Golf courses do not threaten the nation's water supplies. Scientific studies show that pesticides used on golf courses do not seep into neighboring groundwater sources. Other studies demonstrate that stormwater runoff is greatly reduced by turfgrass. Finally, still more studies show that grassy area reduce soil erosion, which is a major cause of sedimentation pollution in the nation's rivers, lakes and streams.

On the whole, a golf course makes an environmentally sound contribution to any community.

GOLF COURSES AS COMMUNITY ASSETS

FINDINGS: Of all the kinds of development that can occur in a community, a golf course is probably the most desirable. As part of an important nationwide recreational industry, a golf course confers many direct and indirect economic benefits. In addition, a golf course may be the only kind of development which immediately improves the environmental health of a community. From a variety of perspectives, then, a golf course is one of the best investments in the future of a community.

GOLF AND THE ECONOMY: A study sponsored by the National Golf Foundation shows that there are 20 million Americans who play golf and that some

CONTINUED PAGE 20

Getting The Priorities Straight

by Stanley J. Zontek
Director, Mid-Atlantic Region,
USGA Green Section

When the time comes for a club to spend money - big money - for capital expenses, the needs of the golf course itself frequently take on a secondary role to the needs of the swimming pool, the tennis court, or the clubhouse.

You don't believe it?

Just think of the number of clubs that have completed \$1 to \$2 million or more in renovations to their clubhouses or built tennis courts during times of tight money and recession and compare them to the number of golf courses that have spent the same amount of money on new maintenance buildings, rebuilding poorly built greens, installing up-to-date irrigation systems, or replacing old, worn-out maintenance equipment on a regular, scheduled basis. On a smaller scale, which often comes first. . .repairs to the swimming pool, new carpets or drapes in the clubhouse or a new tractor? More times than not, equipment for the golf course is deferred.

Are golf course superintendents bad salesmen Or have today's golf clubs and golf facilities misplaced their priorities?

In my experience, probably a little of both. Of all the physical assets of today's modern and complete club facility, the golf course itself remains the main attraction. Around it centers the prosperity and the reputation of the entire club

How often is a club really remembered for its great gourmet meals, or for its colorful swimming pool cabanas? Most clubs are remembered for their golf courses. . .how they look, how well they are turfed and manicured, and how well they play.

It truly is credit to today's golf course superintendents and their hard-working crews that, in many instances, golf courses are in such great condition in spite of modest maintenance budgets, poor irrigation systems, old maintenance equipment, poorly built putting greens, and maintenance buildings that even now lack proper lighting, heat, sanitary facilities, pesticide storage, and equipment repair areas.

Obviously, some golf courses have set their priorities properly and have spent money when and where it was needed, and in most every instance their courses

CONTINUED PAGE 18



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Golf Digest Names 1988's Best New Golf Courses

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"GOLF DIGEST'S BEST NEW GOLF COURSES
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TRUMBELL, CONN. - The Links at Spanish Bay, in Pebble Beach, California, Black Diamond Ranch Golf and Country Club in Lecanto, Florida and Blackwolf Run Golf Course in Kohler, Wisconsin, have been named America's Best New Resort, Private and Public Courses, respectively, by *Golf Digest*.

The sixth annual selections are announced in the January, 1989 issue.

Courses opened for play between July 1, 1987 and June 30, 1988 were eligible and voted on by a panel of 400 panelists. Seventy-seven courses were evaluated on the basis of five criteria: shot values, playability, design balance, memorability and esthetics.

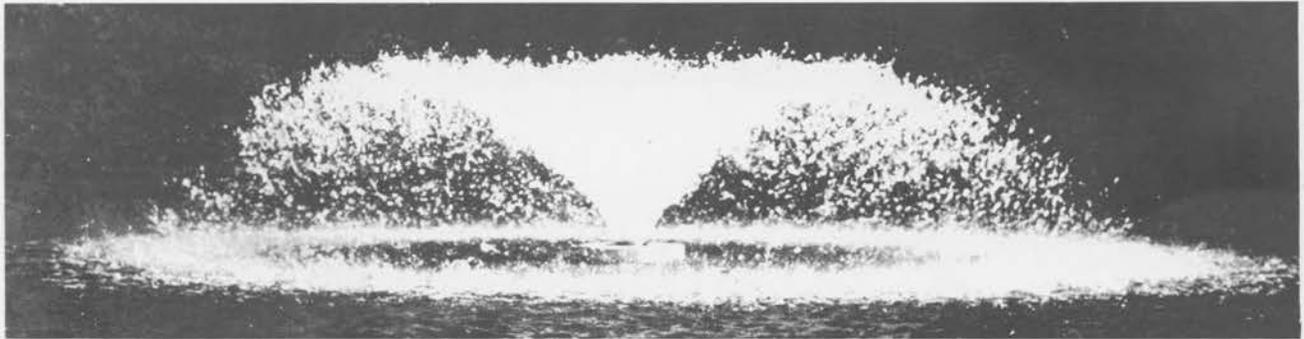
The Links at Spanish Bay was designed by the team of golf architect Robert Trent Jones Jr., golfer Tom Watson and Frank (Sandy) Tatum, former U.S. Golf Association president. The trio recreated the look, feel and playability of a grand old Scottish Links,

using several holes from St. Andrews, Muirfield and other famous U.K. courses as models.

Runners-up in the resort category were The New Course at Grand Cypress in Orlando, Florida, designed by Jack Nicklaus, and Teton Pines Golf Club in Jackson, Wyoming, designed by Arnold Palmer and Ed Seay.

Designer Tom Fazio's Black Diamond course also includes reminders from other great courses, like Pinehurst and Jupiter Hills. But the heart of the course begins on the par-three 13th, where the first of two deep abandoned limestone quarries is encountered. The course then plays more like Pebble Beach, with holes over chasms, along clifftops and down an escarpment. Fazio has now won top honors two straight years. His Wade Hampton course was named Best Private Course in 1987 and his Barton Breek layout was third.

CONTINUED PAGE 18



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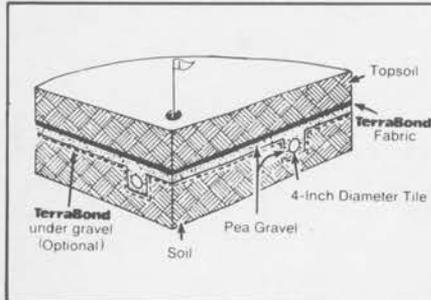
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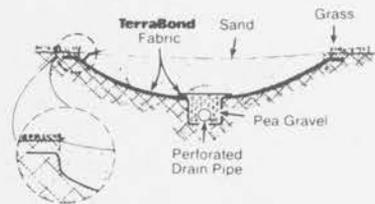
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Use TerraBond as a replacement for the usual 2" coarse sand layer between the greens mix and the gravel drainfield. The fabric will eliminate downward migration of the mix into the gravel and the subsequent reduction of water flow from the green.

TerraBond's high water permeability and highly engineered uniform density and EOS (AOS) make it an ideal fabric for this use. It will not rot in the soil-water environment. Its horizontal (planar) flow characteristic moves excess water horizontally out to the sides.

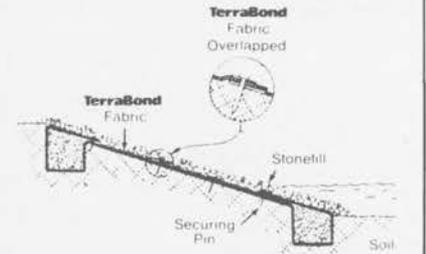
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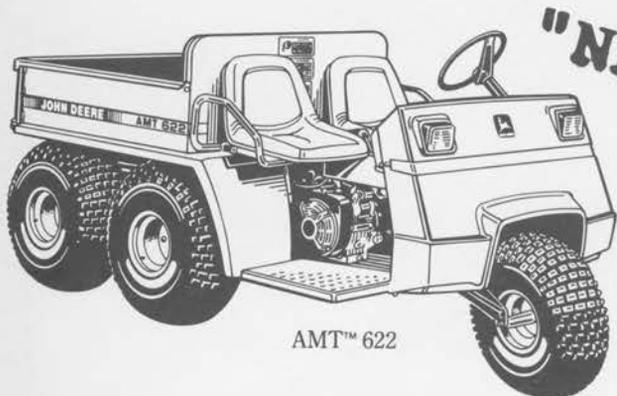
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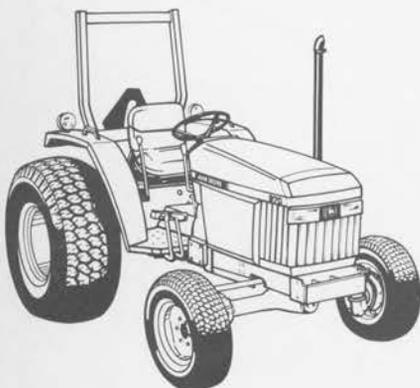


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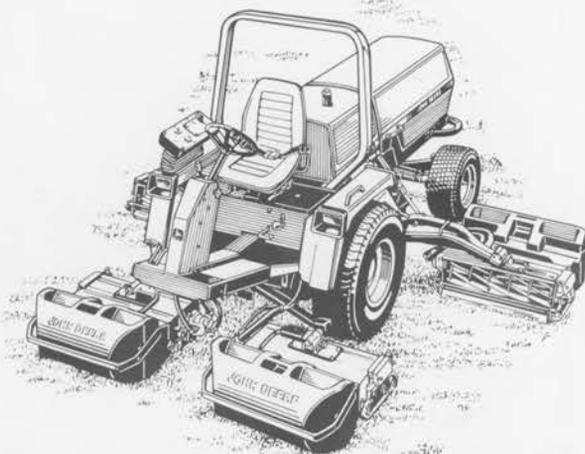
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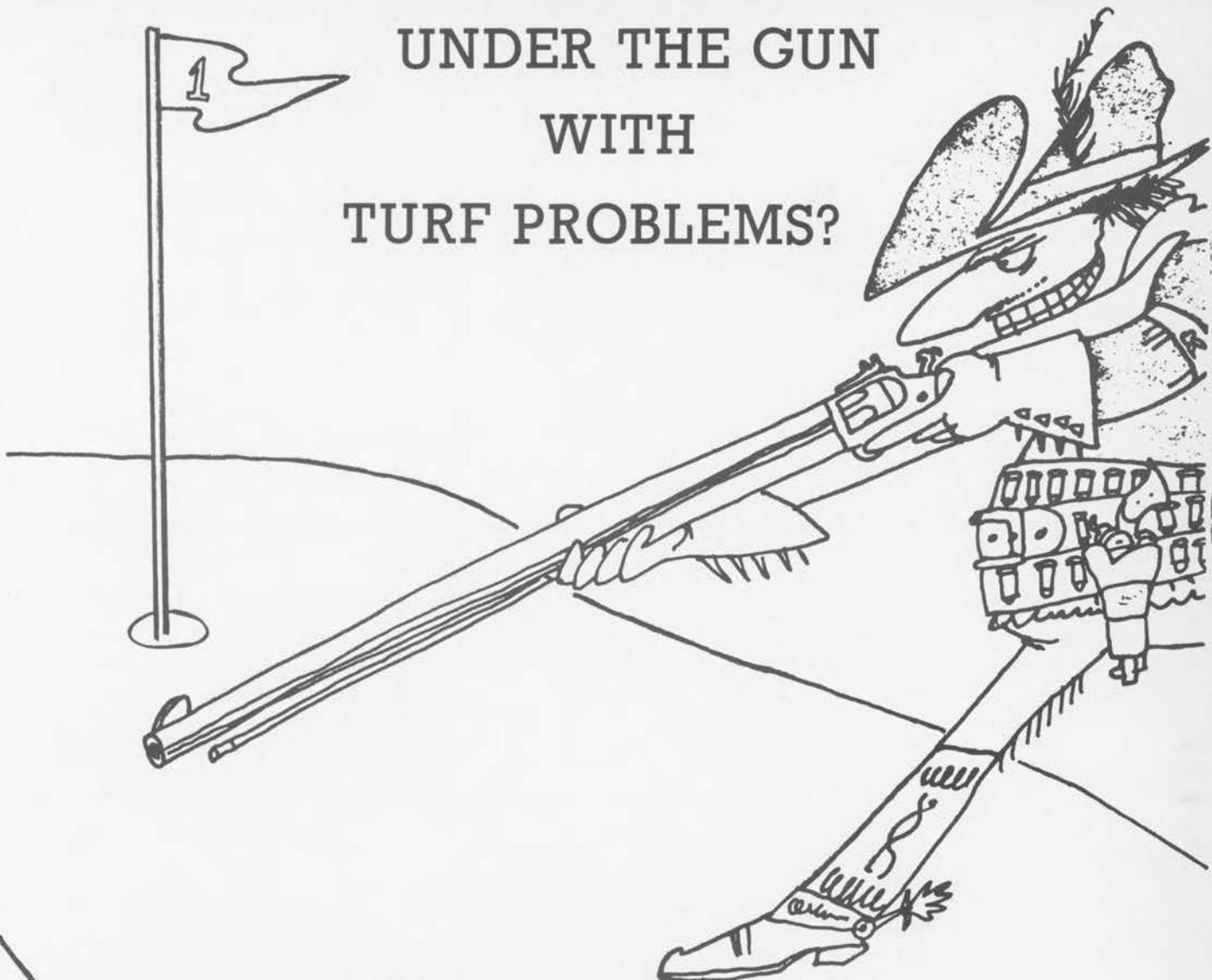


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INDIANWOOD, CONT.

Indianwood Golf and Country Club (New Course) in Lake Orion, Michigan, designed by Bob Cupp and Jerry Pate, and Metedeconk National Golf Club in Jackson, New Jersey, designed by Robert Trent Jones and Roger Rulewich, were runners-up in the private category.

Pete Dye's Blackwolf Run course has a diverse collection of holes that clearly resemble previous Dye designs. Though the course is located in the rolling meadowland and river bottom of eastern Wisconsin, the long, deep bunkers, towering mounds lining some holes and greens half hidden by ominous bunkers are an unmistakable reminder of PGA West. It also features one of the few double green Dye has ever designed.

Second to Blackwolf Run was Page Belcher Golf Course (Stone Creek Course) in Tulsa, Oklahoma, designed by Don Sechrest, while Michaywe Hills Golf Club (Lake Course) in Gaylord, Michigan, designed by Jerry Matthews, finished third.

PRIORITIES, CONT.

reflect this philosophy. Regretfully, other clubs have not.

What to do?

The superintendent must be willing to state his case for needed capital expenditure improvements to his committees, governing boards, and/or administrators. Sell your programs because, after all, as their first priority most people join to play golf. In my opinion, if your case is properly presented (perhaps with the help of your regional USGA Green Section Agronomist), the decision makers will understand that the needs of the golf course must come first.

Perhaps in the future the following scenario will take place at a board of directors meeting: "Gentlemen, the motion is passed. We will replace the old irrigation system, renovate the golf course superintendent's maintenance area, and then replace the carpets, drapes, and furniture in the clubhouse. After all, the golf course is our first priority."

From Northern Ohio - **TURF**, Nov./Dec., 1988.

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PUTTING GREEN SPEED, CONT.

not they used it and why. For those who do use it most of them responded as I did, for obtaining consistent greens. Many of them also added, in sort of a contemptible way, they make sure no members see them use it. I have read many articles concerning the stimpmeter and it is apparent many superintendents do not particularly like it although it does serve a useful purpose. The demand for ultra fast greens in the early 80's and the resulting stress it caused to greens and superintendents may have developed this negative attitude towards the stimpmeter. Putting aside all resentment I feel the stimpmeter, coupled with sound agronomic practices, can be helpful in the management of high quality greens. Some superintendents even post the daily green speeds to inform golfers of the conditions for that day. I now see the trend of ultra fast greens falling off, and not too soon, in my opinion. The stimpmeter has taken some of the blame for creating the trend and maybe unjustly so.

There are many ways the golf course superintendent can control and influence putting green speed. Routine cultural practices like topdressing, verticutting and aerification not only can improve green speed but will also improve turf quality. Sand topdressing has been practiced in our region for many years. By applying a light layer of USGA specified sand every 2-4 weeks greens will putt smoother, truer and faster. The pitfalls of sand topdressing are you must apply the sand religiously every 2-4 weeks during the growing season to avoid layering, the sand is abrasive and wears out reels and bedknives faster and greens can tend to dry faster than soil base greens. Topdressing with a soil mix can be effective also but many time it is difficult to find the same mix from year to year. Verticutting lightly on a regular basis will control grain. Aerification will improve the root system and contribute to the overall health of the turf so that other intense management practices can be used. The most significant methods the superintendent can alter green speed is through fertilization, height of cut and mowing frequency.

There is no doubt that when fertilizer rates decrease, particularly nitrogen, putting speed increases, and vice versa. When many superintendents were caught up in the green speed contest nitrogen rates were as low as 1#N/1000 sq. ft. per year with cutting heights below an eighth of an inch. Many felt this was the only way to obtain the ultra fast speed. It was just a matter of a few years when many golf courses experienced problems with their greens. Thinning turf, algae, moss, weed encroachment and disease, most notably Summer Patch were symptoms for greens with low fertility and extra low height of cut. From what I see many superintendents are now moderating their fertilization programs by applying more nitrogen and potash on annual basis but applying it in light rates. I for one have increased my nitrogen annually and I am seeing healthier turf. From my view, gone are the days of low, low fertility rates and low heights of cut. Many superintendents

CONTINUED PAGE 22

\$20 billion spent on golf every year. In addition, golf course maintenance is a \$3.5 billion a year industry which employs 60,000 to 140,000 workers and supports many industries that supply golf courses with equipment, materials and service.

Currently, the number of Americans playing golf is increasing 2-3 percent per year, three times as fast as general population growth. Unlike sports such as professional football and basketball, however, most of the money spent on golf is spent by participants, not spectators. Golf is thus a truly democratic sport that can be played by persons of all ages.

In 1986, 20.2 million U.S. golfers played 421 million rounds of golf. At the present rate of increase in participation, there could be as many as 41 million persons playing golf by the end of the century. Under one reasonable scenario, golf could be a \$31 billion industry by the year 2000. In fact, the current 12,400 golf courses will be overwhelmed by the demand, and we may be 4,000 courses short of the projected demand in another decade. This could lead to severe overcrowding and deterioration in current facilities unless more courses are built.

GOLF AND THE COMMUNITY: Fortunately, golf courses are an asset to any community and are superior in many ways to almost any other type of development. Experience has shown public golf courses can be built that will yield an adequate return on investment without the use of public funds. Golf courses provide a sanctuary for many kinds of

bird and animal life, reduce air pollution and of course provide a valuable recreational resource to the community. Golf courses increase the community's tax base and help raise millions of dollars for charity every year. Especially for those over 50, golf can be a significant source of exercise. Since golf courses often allow strollers, joggers, and cyclists to use their grounds, a golf course can contribute in many ways to the health of the community.

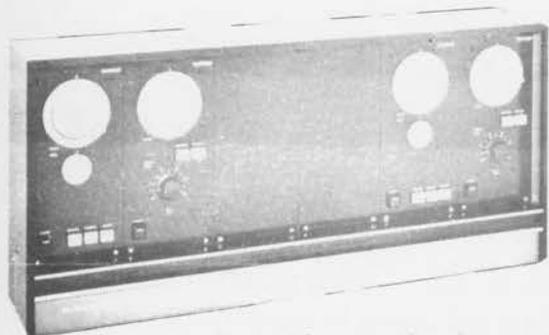
GOLF COURSES AND THE ENVIRONMENT: In contrast to many kinds of commercial development, it is easy for golf courses to fit in and harmonize with the natural environment. Golf is a "green" business and golf courses function as valuable green belts, producing pure oxygen and cooling the air. Because a typical golf course can provide seven times as much groundwater recharge as it uses for irrigation purposes, a golf course is actually a net water supplier. Golf courses help conserve valuable land by reducing soil erosion. Numerous golf courses have been built on old waste landfills, further conserving the Earth's resources.

As noted earlier, golf courses can provide an oasis for plant and animal life. Golf course developers and environmentalists have worked together to preserve endangered species when their habitat has been threatened. Increasingly, golf courses are being designed with natural rough and wild areas in order to further harmonize with the environment and reduce water and pesticide use.

CONTINUED PAGE 25

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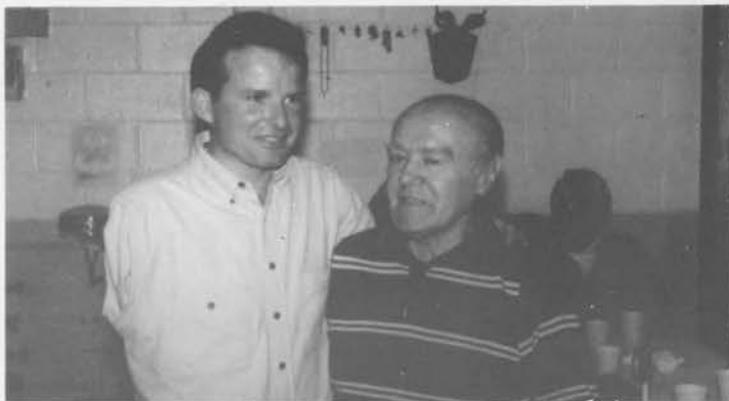


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PUTTING GREEN SPEED, CONT.

lost their jobs living on the edge of disastrous turf loss when it should not have been necessary just to please a small portion of the golfers. Many turfgrass agronomists are now recommending rates of 1/2# of N/1000 per growing month on cool season grasses. But they also recommend spoon feeding the fertilizer in rates at a 1/4#/1000 or less for a single application. Higher applications cause the turf to become coarse which is difficult to fine down during that growing season. Some superintendents apply a weekly rate of N at 1/10# per 1000 square feet, especially during hot weather to avoid fast, lush growth while still satisfying the turf's need for food. The only way to apply this low amount of fertilizer with any uniformity is by using a soluble fertilizer. Fertilizer rates will vary from course to course depending on such factors as soil conditions, turfgrass species, size of greens, irrigation, precipitation and amount of play. While not over fertilizing I like to provide the greens with good color and adequate growth for rejuvenation and health while maintaining good green speed.

I'm not going to tell anyone how high or low to cut their greens, or how often. Every superintendent should know what factors determine green speed at their course and work within those parameters to produce quality putting surfaces. But everyone must know that bentgrass or poa annua can be cut just so short and live to tell about it. Grinding bedknives paperthin, adding weight to mowers, using wiehle rollers and other techniques to cut turf so low the word green only relates to an area and not the color of the grass. While low height of cut plays a major role in green speed it also puts the turf under extreme stress, especially in hot weather, many times to the point of turf loss.

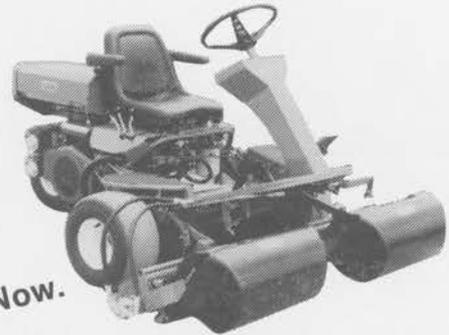
A reduced root system can be expected under low heights of cut. In the past I have heard superintendents comment that you don't putt on roots. But without an adequate root system you have a great potential for turf loss. The grass blades are more susceptible to disease and insect attacks. The shorter root systems require more water and syringing during the hot periods may be required to prevent turf loss from wilt. Aerification during stress conditions may be necessary to keep the turf healthy. There are aerifying units available on the market today that can provide the opening of the turf with small diameter holes which will aid in water penetration and root growth and not significantly disturb the putting surface.

To point out the difference in height of cut I would like to present this example. If you are presently cutting greens just under 7/64" (.105) and raise the height to 1/8" (.125) you are in effect increasing the leaf surface of the turf by 20%. quite a significant amount at that low height. By going up an additional 1/64" a 40% increase can be realized. There are other methods to achieve the putting green speed you desire without cutting the turf to the crowns. This past season I raised our height of cut by 20% and the greens were healthier than in past years even through

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the drought of early summer and the hot, humid conditions of mid-summer. By increasing the intensity of my cultural practices I sacrificed very little speed for regular play and was able to increase the speed for special events and tournaments just by double cutting for a few days before and during the events.

What type of mower will provide the necessary putting surface your golfing membership requires, walking units or the tri-plex riding mowers. I feel if you are looking for the normally paced speed in greens the riding units will provide the quality of cut desired. But if it's the extra fast greens you require the feeling among superintendents is that the walking mowers will cut tighter than the riding units. The rigid cutting head of the walker versus the floating units of the rider is what may make the difference. One factor you may want to consider in choosing what mower to use are labor costs, which will be greater with walkers. Soil compaction and turf wear, especially the outer perimeters can be potential problems of riding units. These are but a few of the factors to be considered. Talk with superintendents who use the riders or the walkers. They may be able to provide the answers you are looking for.

No matter what type of mower you are using the need for a properly maintained greensmower cannot be overstated when trying to produce quality putting surfaces. Mowers that have dull blades and are only occasionally checked for reel to bedknife adjustment will not produce a cut needed to provide a fine putting surface, especially at the lower heights of cut. Rollers should be checked for looseness and bearing wear as they have a direct effect on the height of cut. Reels will need to be backlapped regularly or sharpened with a spin grinder, especially if you are topdressing on a regular basis. Bedknives may need to be changed two or three times during the season, depending on the frequency of mowing and topdressing. When cutting greens a mower must have precise adjustments and be in good running order to obtain the optimum use of these expensive machines. They can only cut as good as they are maintained. If not maintained properly the purpose of the unit is defeated.

Grooming greens will aid the superintendent in achieving fine putting surfaces, and there are a number of accessories available for the greens mower which can help prevent or reduce the build up of thatch and grain. Attachments such as the turf groomer, a recent development in vertical cutting units, are placed directly in front of the reels. These units work exactly like the separate vertical mower units that have been available for many years. One must beware not to use these vertical units on a day to day basis, especially during stress periods as turf thinning may result. Wiehle rollers have been on the market for a number of years. used in place of a standard solid or swedged roller, the wiehle will provide extra weight and the ability to cut into grain and thatch. Again, when the turf is under stress you may want to avoid using them as they can cause

CONTINUED NEXT PAGE

PUTTING GREEN SPEED, CONT.

thinning of turf, especially when cutting the perimeter around the green. Brushes and combs are other attachments used to fluff up the turf just prior to cutting.

Daily weather conditions have a degree of influence on putting green speed and sometimes we have little control over green speed when nature is involved. As day length and temperatures change throughout the year variations in the rate of turf growth occur. During the early Spring and late Fall turf growth has slowed due to cool, frosty mornings and green speed increases. Also, the grass requires little water during these periods which makes the putting surface firm and smooth. There are many hot, sunny days when the putting surface will dry out during the day and green speed increases. During periods of wet, humid conditions a consistent green speed can be difficult to maintain on a daily basis. I have experienced a drop of 2 feet on the stimpmeter after a heavy rain from the night before. In the hot summer months when the turf is growing and the humidity is high it is not as easy to obtain fast speeds without putting the grass under stress. You may want to consider raising the height of cut slightly, cut back on grooming and fertilizing and apply water with discretion. Putting speed may be temporarily compromised but if the green is pushed to the limit during periods of stress the loss of turf may be hard to explain.

Depending upon on soil conditions, irrigation can play a significant part in green speed. Many of the newer courses have sand based greens and excellent drainage which allows the superintendent a little room for over application. While most older courses have greens with heavier soils and inadequate sub-surface drainage and these types of greens must be handled with care when irrigating to avoid over-watering. While less irrigation will increase green speed the use of too little water can cause localized dry spots and greens too hard to hold a shot into the green. On the other end of the spectrum too much water will slow greens down while promoting disease and compaction problems.

As I mentioned before, I am not here to judge the methods or practices of any individual. But I still feel that common sense must prevail when attempting to provide conditions that could be detrimental to healthy turf. There are many ways to provide good putting surfaces without sacrificing turf and that is why I marvel at many of my peers who are so innovative and resourceful.

In the 1987 June/July issue of the USGA Green Section Record an article can be found concerning a superintendent's methods for achieving fast greens. Michael Zedreck, Superintendent at Butler Country Club in Butler, Pennsylvania is the author. Mike was able to achieve fast greens by altering his agronomic and mowing practices. He applies 5-10# of N/1000 sq. ft. annually while cutting the greens 7 days a week; six of those days they are double cut. His height of cut is below 1/8" and his daily green speeds are fast. On tournament days he triple or quadruple

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cuts. What I have mentioned is just sketchy details of his total procedure but it is obvious his approach to attaining fast greens is different.

Jerry Kershsky, superintendent at Westmoor C.C. in Wisconsin was maintaining good paced greens (9.5 stimpmeter) for regular play while mowing greens at 1/8". When preparing for an event or tournament and he wanted to quicken the pace he would roll them 2-3 days before and during the event using a set of triplex rollers he copied from an old set of cast iron rollers. He used plastic water pipe sections filled with concrete and tennis balls to get the desired weight he wanted. Total time to roll all of the greens with one set of rollers was 2½ hours. The results were immediate as he gained an additional 10" on the stimpmeter. Because he has been sand topdressing for 16 years he did not have a compaction problem. Under conditions of heavy rains, high dew points or stress he would not roll the greens to prevent damage to the turf. His rolling program was done on an as needed basis and he was able to achieve faster greens when needed without lowering the height of cut or cutting back on fertilization.

Rolling greens, providing the greens are constructed with the proper soil mix, is an alternative to be considered rather than obtaining ultra fast greens through low fertility and close mowing. Most modern putting greens are constructed with a sand root zone that meet USGA Green Section guidelines. These type of greens are not prone to compaction therefore rolling could be beneficial in obtaining faster green speeds. Many courses that do not have high sand content greens but have been sand topdressing for a number of years could roll greens and not be concerned with compaction. I will try rolling next year on a limited basis to see if I can maintain fast greens while managing the turf under less extreme agronomic practices.

Putting green speed was a controversial topic 10 years ago, it still is today and it will be 20 years from now. From my view point I see the trend for moderately fast greens continuing but avoiding the ultra fast greens that were commonplace just a few years ago. We, as superintendents cannot get caught in the same situation and try to compete against one another for the fastest greens. Technology in the future may allow us to achieve faster putting surfaces without sacrificing the turf. Let's wait for that day to arrive.

GCSAA NEWS, CONT.

CONCLUSIONS: Golf is the oldest organized sport in the world and surely one of the most popular. It is a truly democratic, participatory sport as most of its players are ordinary duffers, not paid professionals. The golf courses on which they play are an asset to any community. In addition to their obvious economic benefits, golf courses have many environmental advantages. They can recycle waste land and water, cleanse the air of harmful pollutants, reduce soil erosion, and generally contribute to a healthful atmosphere.



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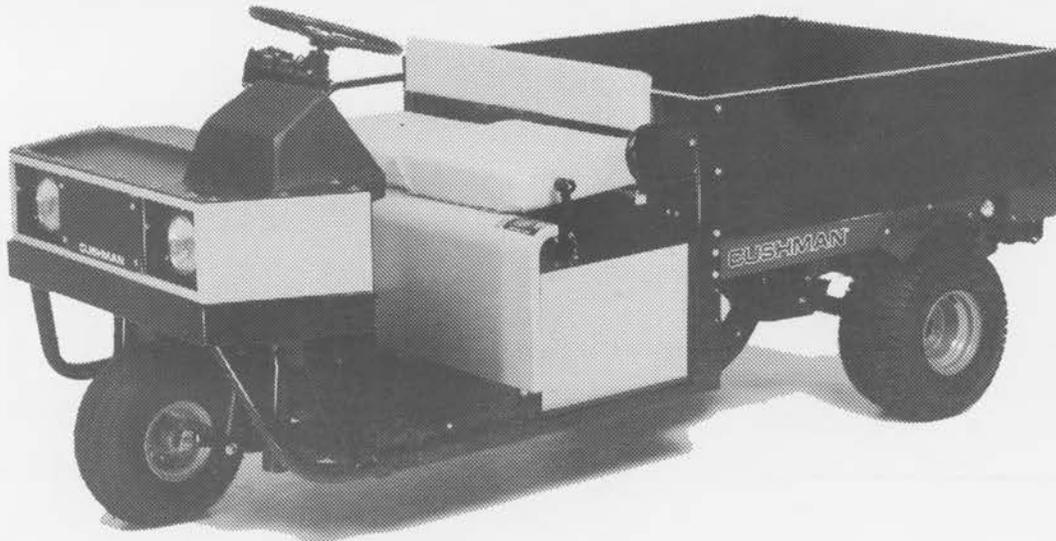


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SPECIFICATIONS:

MODEL 531 Runabout

BODY:

3-Wheel with Pick-Up Box, Tow Hitch, Front Bumper, Light Switch, Hour Meter, Horn, Amemeter, Gasoline Gauge.

PERFORMANCE:

Rated Capacity: 1900 lbs.

Speed (max): 18 mph

POWER:

Engine: 22 hp. OMC, Die-Cast Aluminum, Two Horizontally-Opposed Cylinders
Air Cooled, 4 Cycle

CLUTCH: 6.5" Commercial

TRANSMISSION: H Shift Pattern, 3 Speeds Forward and 1 Reverse

DIFFERENTIAL: 10.25:1 Axle Ration (worm gear)

GOVERNOR: Overspeed Type

THE STANDARD BY WHICH THE OTHERS ARE MEASURED.

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JACOBSEN. UP FRONT IN LIGHTWEIGHT FAIRWAY MOWING.

Introducing the all-new Jacobsen LF-100, the 5-gang designed to increase your lightweight mowing productivity.

The wing mowers are up front for better visibility. So the operator can hold a closer line—even at mowing speeds over 5 mph—to take full advantage of the 100" cutting width. This unique, up-front configuration also gives better access to all mowing units to quickly empty catchers and make mower adjustments easy.

Heavy-duty reels deliver a greens-like cut. New heavy-duty reel construction provides extra strength for long life in demanding fairway conditions. The fully floating, 22-inch steerable 7-blade reels are heavier, to follow ground contours closely, for that smooth, consistent Jacobsen cut that's the envy of the industry.

True lightweight mowing. Newly designed low-profile turf tires produce the lightest ground pressure, and the rear wheels roll on a different track than the front,

so your tender turf thrives with less compaction. And the wide 4-wheel stance offers excellent traction, increased stability and a tight turning radius.

Built to last. The LF-100 has a proven, rugged chassis, a durable and simple hydraulic system and liquid-cooled diesel engine for a longer, trouble-free life on your fairways.

What's more, the entire machine is backed by your Jacobsen distributor, so you're never far from dependable parts and service support.

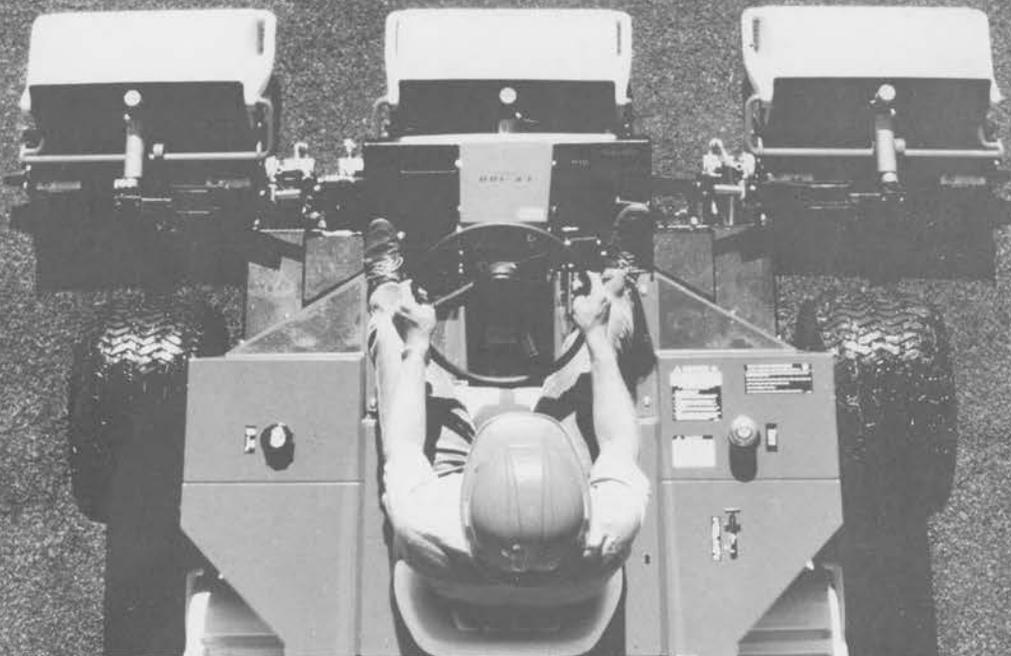
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