

A PATCH OF GREEN

SUMMER, 1997



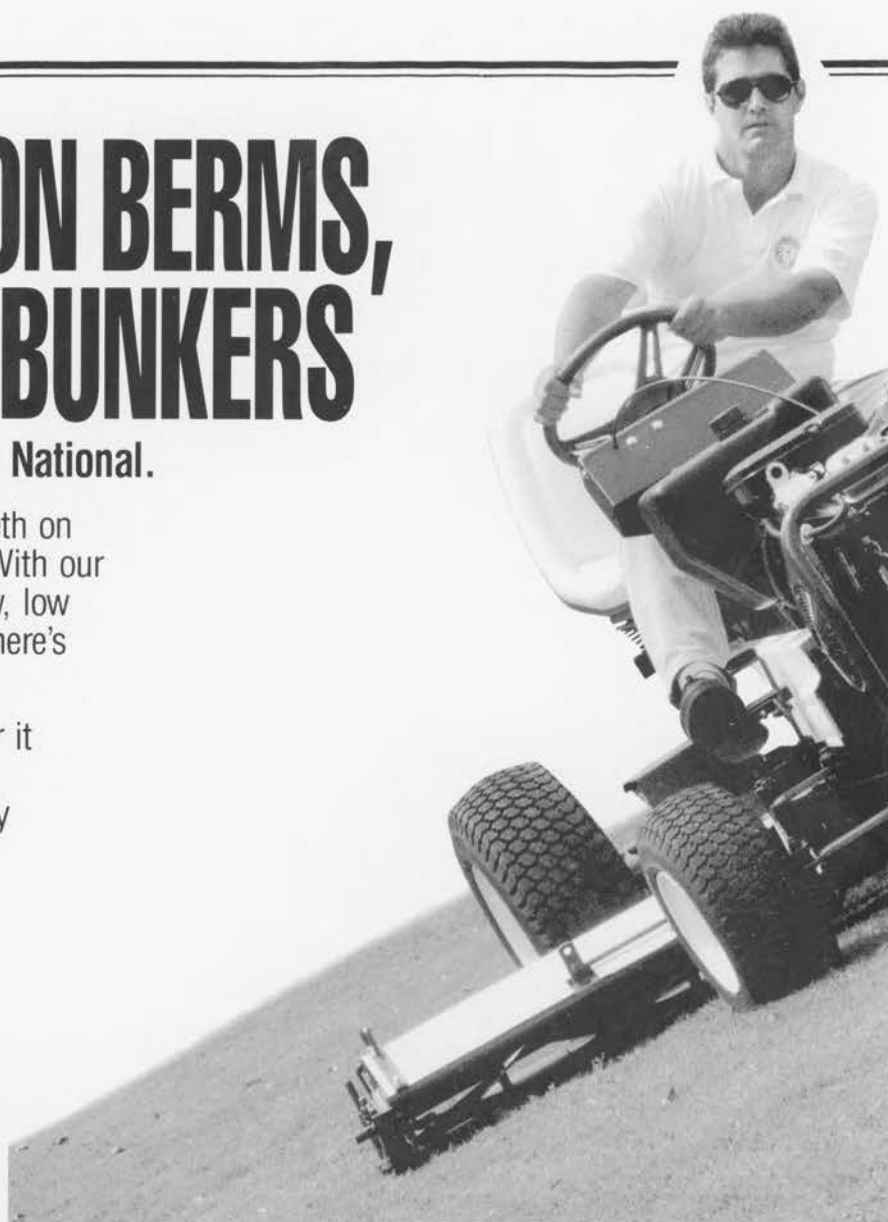
Special Olympics at Bald Mountain Raises \$20,000

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A PATCH OF GREEN

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Contact for GDGCSA Information

Kate Mason

Executive Secretary

GDGCSA

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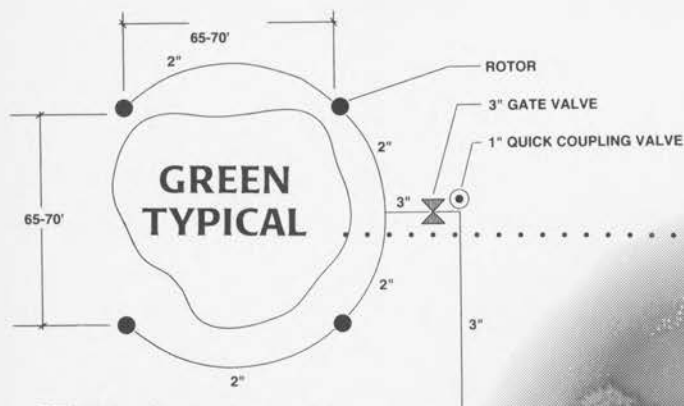
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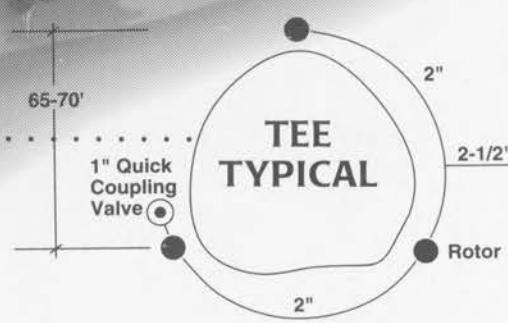
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Thank you to all who returned the survey on association matters; the information compiled will work as an invaluable tool for your Board of Directors as they chart the future of our association. The Board values your input and is working diligently to make this association useful to each and every member. It is our sincere hope that we provide information to aide in making everyone's job a little easier, simply by making pertinent issues and facts available to all, be it through monthly membership meetings or our *Patch of Green* magazine. If anyone has any questions or concerns, please contact me or any Board member.

We want to hear your input and wish to serve you all the best way we possibly can. Please stay tuned as we implement changes for the better, based on all of your survey responses.

Another thank you goes to all who attended the 16th annual Special Olympics fund-raiser on Friday, May 16 at Bald Mountain Golf Club. Each individual who volunteered his or her time is also to be commended, as well as all the affiliate members who so generously donated their time and money towards the effort. Last, but not least, a huge thank you goes out to the Special Olympics committee, each of whom donated their talents to make this year's event the tremendous success that it was. This fund-raiser was originally conceived 16 years ago, by a very progressive group of individuals who made up our Board at that time, to give something back to the community, not just to the game of golf. Today, many other chapters around the country have caught on to this idea and are holding their own community fund-raisers. Most of these have only begun in the last five or so years—we have been at it for SIXTEEN! We are a fortunate group to have had so many talented individuals involved in the running of this association; the continued success of the Special Olympics event is a tribute to all of those who have been involved through the years. You all know who you are, superintendents and affiliates alike; you all deserve accolades beyond a simple thank you. I know that all the Special Olympians would give each of you a big hug if they were to meet you—you are the reason they all can compete so validly to achieve success, not only on the field of competition, but on the field of LIFE as well.

Here's wishing each of you a trouble-free and fruitful 1997 season. May Mother Nature be good to us all as we continue to provide the best possible playing conditions for a fortunate Michigan golfing public. Let's all hope they realize and appreciate how fortunate they are to have us there for their respective golf courses.

Paul W. Dushane

A handwritten signature in cursive script that reads "Paul W. Dushane".



American Low Gross Team (*l. to r.*) Mark Policht, Mike Fouty, Jay Delcamp (Lowell Weaver not pictured)



Canadian Low Gross Team (*l. to r.*) Bob Ackerman, Bill Fach, Jerry Richard and Robby Robinson



Host Superintendent Andy Socie (*left*) of Grosse Ile C.C. with "Neighbor" Ed Heineman, CGCS of Water's Edge C.C., whose courses border each other



Winning Team of 2-Man Net Best Ball event. (*l. to r.*) Dr. Trey Rogers, Jim Timmerman, CGCS at Orchard Lake C.C., Paul Dermott, CGCS at Oakdale Golf & C.C. and Stuart Mills, Royal Estate G.C.

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Greater Detroit GCSA - Ontario GCSA Joint Meeting

By Keith Richards and Gary Thommes

With all this cold weather it was great to have a nice sunny day for the Grosse Isle meeting. The course was in great shape and the attendance was outstanding.

Mike McCartney was a great speaker for the beginning of the golf season. Mike spoke on the importance of positive feedback to employees and the value of listening. Mike taught that it is a necessity to understand that people have preconceived images and thoughts that affect our communications with others and can lead to misunderstanding and conflict. Mike was a dynamic, energetic speaker and held the attention of the audience with solid lessons and good humor. His good humor was a great example of Mike's emphasis of the importance of humor in relationships with people and at the workplace. Those attending the meeting left with some positive tools to manage their employee relationships at their course or workplace. The attendance at the meeting was over 120, thanks to many Canadians traveling a long way for the affair.

Good luck this golf season and remember to listen with an open mind, give positive feedback and always be prepared to laugh at yourself and with others, especially in the workplace.

As for the golf, a beautiful spring day brought out 104 golfers to play the well-maintained golf course, with host superintendent Andy Socie presiding over the golf. Thirty-one Americans of Class A,B competed against 28 Canadians of Class A,B for the annual competition of bragging rights. The results were as follows:

Americans

Mike Fouty - 75
Jay Delcamp - 79
Mark Policht - 81
Lowell Weaver - 83
Total - 318

Canadians

Jerry Richard - 82
Robbie Robinson - 82
Billy Fach - 85
Bob Ackerman - 85
Total - 334

Team Score

(Best two net scores of foursome)

First Place - 122 (-20)

Trey Rogers, Paul Dermott,
Jim Timmerman, Stuart Mills

Second Place - 127 (-15)

Mike Fouty, Angelo Capannelli,
Gordie Witteveen, Jim Foster

Third Place - 128 (-14)

Larry Obey, Mark Policht,
Dan O'Connor, Simon George

Closest-to-the-Pin - Americans

#4 - Dan Johanningsmeier
#13 - Jon Shreve

Closest-to-the-Pin - Canadians

#6 - Len Moore
#18 - Rick Serrao

Longest Drive in Fairway

Americans - Lowell Weaver
Canadians - Len Moore

Attendance Record

Americans

Class A - 25
Class B - 6
Class C - 5
Affiliate - 19
Other - 6

Canadians

Class A - 24
Class B - 4
Class C - 2
Affiliate - 22
Other - 2



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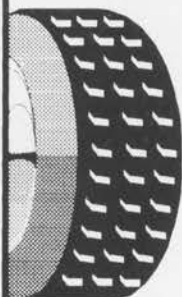
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Soil Stability Relationships in High Sand Content Soils

James R. Crum

Crop and Soil Science Department, Michigan State University

With the support of the Michigan Turfgrass Foundation and the United States Golf Association, we have been concentrating our research work on the variables of high sand content soils and mixtures used in putting greens that contribute to strength and stability. High sand content soils and rootzone mixtures are used extensively for intensively used turfgrass areas such as golf putting greens or athletic fields. These high sand content mixtures are used to produce a soil that will drain rapidly, resist compaction, and promote strong and healthy turfgrass. Unfortunately, there are also problems associated with these soil mixtures. High sand content soils and mixtures store little plant-available water, store few plant nutrients, and can have little soil strength, or lack soil stability. To overcome some of these problems, putting greens, or sometimes athletic fields,

are constructed in such a manner to increase the ability of high sand content mixtures to store plant-available water. Also, soil amendments, such as peat or compost and a host of others, are many times added to high-sand content mixtures to increase the ability of these mixtures to store, or hold, plant nutrients. But, little work has been done regarding characterizing and quantifying the soil strength and stability relationships of high-sand content mixtures. From the literature we have determined the factors that control soil stability in cohesionless soils are the distribution of different sized sand particles, particle shape, relative density, and porosity of the mixture. Soils and mixtures within the present day specifications can range quite widely in the properties that contribute to soil stability. I personally believe that is one of the major reasons why some putting greens reported as built to USGA specifications perform very well and others very poorly.



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Sands that have a uniform distribution (tending to one or a few "adjacent" size classes) lack the right amounts and sizes of particles that fit together (smaller particles fitting into the void space of the larger particles) and provide stability against movement. The Coefficient of Uniformity (Cu) has been developed to describe the distribution of particles. To summarize the coefficient Cu, the greater the magnitude of the number, the wider the distribution of particles and the more stable will be the soil surface. Our work indicates that as the distribution of particles widens and the Cu increases, the bearing capacity and stability of soils increase. The disadvantage of widening the distribution of particles is as Cu increases, the total porosity decreases, generally yielding a lower hydraulic conductivity, or rate of drainage.

(continued on page 11)

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G.D.G.C.S.A. Financial Statements

GREATER DETROIT GOLF COURSE SUPERINTENDENTS ASSOCIATION Statement of Financial Position December 31, 1996

ASSETS	
Current Assets	
Cash	\$35,163.00
Accounts Receivable	3,545.00
Dues Receivable	165.00
Total Current Assets	\$38,873.00
Equipment (net of depreciation)	2,127.00
TOTAL ASSETS	\$41,000.00
LIABILITIES	
Current Liabilities	
Accounts Payable	\$ 407.00
Income Tax Payable	900.00
TOTAL LIABILITIES	\$ 1,307.00
EQUITY	
Membership Equity	39,693.00
TOTAL LIABILITIES & EQUITY	\$41,000.00

GREATER DETROIT GOLF COURSE SUPERINTENDENTS ASSOCIATION Statement of Revenue and Expenses For the Year Ended December 31, 1996

REVENUES	
Advertising	\$ 44,055.00
Dues	33,896.00
Interest	757.00
Meeting Fees	28,208.00
TOTAL REVENUES	\$106,918.00
EXPENSES	
Awards	\$ 2,000.00
Depreciation	759.00
Income Taxes	1,500.00
Insurance	1,090.00
Magazine Production & Mailing	42,534.00
Meetings	34,349.00
Membership Welfare	236.00
Postage	2,671.00
Printing & Supplies	1,942.00
Professional Fees	20,158.00
Repairs & Maintenance	1,989.00
Telephone	1,428.00
TOTAL EXPENSES	\$110,656.00
Change in Membership Equity	(3,738.00)
Beginning Membership Equity	43,431.00
Ending Membership Equity	\$ 39,693.00

GREATER DETROIT GOLF COURSE SUPERINTENDENTS FOUNDATION Statement of Revenues and Expenses For the Year Ended December 31, 1996

	Golf Day	Special Olympics	Total
REVENUES			
Donations	\$31,380.00	\$17,915.00	\$49,295.00
Event Fees	28,835.00	7,775.00	36,610.00
Interest	162.00		162.00
TOTAL REVENUES	\$60,377.00	\$25,690.00	\$86,067.00
EXPENDITURES			
Research & Scholarships	\$32,500.00	\$15,000.00	\$47,500.00
Event Fees	30,598.00	9,586.00	40,184.00
Miscellaneous	15.00	15.00	30.00
TOTAL EXPENDITURES	\$63,113.00	\$24,601.00	\$87,714.00
Fund Balance Increase (Decrease)	(2,736.00)	1,089.00	(1,647.00)
Beginning Fund Balance			23,627.00
Ending Fund Balance*			\$21,960.00

*This balance is not included in the assets of the association

NOTE: The financial statements presented herein have not been audited. However, the association's Audit Committee conducted their annual audit of our financial records and have noted no problems. We have presented these statements based on the accrual basis of accounting.

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Soil Stability (continued)

Sand particle shape has also been included and discussed in the USGA specifications primarily because of the stability, or lack of, associated with shape. Rounded particles are the least stable and very angular particles are the most stable because of the differences in friction resistance associated with those shapes. Unfortunately, it is difficult to find sand sources that will yield consistent particle shapes in Michigan and the Midwest. For this reason, we are not including particle shape as one of the variables of high priority in our study. Particle shape may be important in topdressing applications because angular particles can be extremely abrasive to the turfgrass and cause considerable physiological stress. Rounded particles are less abrasive but are also less stable. One of the struggles of the turfgrass manager is to obtain the sand material with the optimum characteristics.

To date, our work has concentrated on laboratory prepared samples. Equipment was purchased in 1996 that will allow us to measure soil strength on existing putting greens or athletic fields. We want to test a variety of soils under a variety of conditions to build a database of information on the range of soils in Michigan. If you are interested in us potentially testing your soils, please contact me so we can arrange a time to visit.



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In 1996 we have characterized several high sand content soils and mixtures ranging from those that are stable to those that are not. Because of your support we will be investigating this problem further. Our final objective is to deliver to the decision makers (golf course superintendents, golf course architects, etc.) an algorithm (decision tool) that will allow them to make a decision on how a particular sand mixture will perform. I believe we are making significant progress toward solving this problem.

Mr. Paul Dushane, President
G.D.G.C.S.A.

Dear Paul,

I would like to take this opportunity to thank the Board of Directors and members of the Greater Detroit G.C.S.A. for all of your help and support during my campaign for director of G.C.S.A.A. While I was not successful in winning a seat on the board, the support I received was better than expected and we will do it next year.

I would especially like to thank Mark McKinley and Mike Jones for the work and efforts in running the "MICHIGAN ROOM". I know personally how much work that is and you did a great job. I would also like to thank Kate Mason, Mark and Mike for putting together the recognition night, card and flowers for my wife. This support was overwhelming and greatly appreciated. It makes the effort of running all worth it.

To close, thank you just does not say enough to express my gratitude. If there is anything I can do for you, please do not hesitate to call me. I have been appointed to the Education Committee of G.C.S.A.A. and will keep in touch and updated as much as possible with what is going on at G.C.S.A.A. during this year. Thank you again.

Sincerely,
Jon D. Maddern



Mark Glasson of D&C Distributors



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Julie Murray and Ed Hock



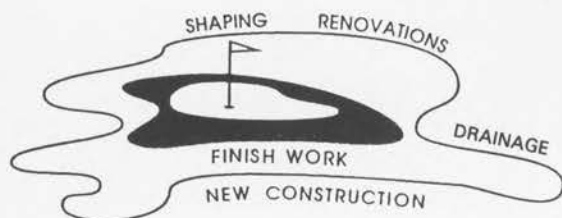
(L. to R.) Mike Brannigan, Dale Bauer, Tom Gill



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MICHIGAN SPECIAL OLYMPICS 1997 ANOTHER GREAT DAY!

By Ed Hock and Gary Thommes, Co-Chairmen, Special Olympics Committee

Again, for the 16th consecutive year, the Greater Detroit Golf Course Superintendents Association has sponsored a wonderfully successful golf outing to benefit the Michigan Special Olympics. Friday, May 16th at Bald Mountain Golf Course in Lake Orion was a fabulous day. Cold weather and blustery winds were nullified by the sun and fun of the day. With a field of 120 golfers and 38 sponsors, we outdid ourselves by surpassing our goal and raising \$20,000.

Scramble winners for the day were: First Place -Team #14 (Gerald and Jerry Prieskorn, Scott Barrows and Ron Adams); Second Place - Team #24 (Ted Kasel, Randy Miller, John Haney and Craig Jach).

This year we added a new event - four Holes-in-One, which were sponsored by LaFontaine Brothers Arbor Dodge. Unfortunately, there were no winners of the GMC

truck, PSI Irons, Hyatt Regency stay or \$250 Pro Shop certificate, but Art Green was awarded a putter for "Closest-to-Getting-a-Hole-In-One". Congratulations, Art!

Other winners were: Lori Nicholl with the Longest Drive, Jim Staub for Closest-to-the-Pin, Mark Hensley, who Hit-the-Bullseye Drive and Bruce Eccleton for Closest-to-the-Primo.

Cattails Golf Course also won a Closest-to-the-Pin contest. The prize was "use of a Carry All II for the 1997 season", which was donated by Spartan Distributors.

The Skins winnings was split between Teams #14 (Gerald and Jerry Prieskorn, Scott Barrows, Ron Adams) and #29 (Tom Penzien, Harry Burleson, Dan White, Al Trainor).

With the help of our visiting Special Athletes from the Flint Area, Lee Catz, Patty Davis, Dave Finkbeiner, Tim Gerhardt, Dan Levely, David Mulligan, \$1,000 was raised at the "On-the-Green" and "Putting Challenge" contests. Thanks to Julie Murray and Jennifer Trombley for their dedication to Special Athletes, Special Olympics and this event.

The 50/50 Drawing, Raffle for Prizes and Auction were very successful. Funds raised from the auction of autographed sports memorabilia almost doubled this year. What a great time for such a great cause!

Sincere thanks to all who attended, those who sponsored tees, donated prizes and funds and the Special Olympics Fund Raiser Committee: Don Fields, Tom Gill, Bill Hull, Jim Koziatek, Mark Powers and Joe Singles, who worked so diligently to make this event happen and another success story for GDGCSA.

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Can You Live and Work Better?

by Dick Matthews, Riverview Highlands

In a conversation recently with Kate Mason, somehow she was able to coax me into writing an article for the *Patch of Green* covering the subject matter we were discussing. Please, before you turn the page, give me a chance to share with you some of the discussion Kate and I shared. I promise, this article will not tell you the latest on turf and ornamental and chemicals and all that stuff. If you haven't learned the art of maintaining a golf course from the outstanding professors at Michigan State, there certainly is no hope in learning it from me, since I am a student of the art and not a teacher. Instead, this is an article about golf course superintendents, their dedication to their work and some ideas recently made available to me by a close friend that may help some of you cope with your situations at home and at work.

Have you ever taken the time to talk to the spouse of a golf course superintendent? I think you would be surprised at the similarity in the philosophies that are the driving force behind the actions of superintendents from public and private facilities alike. Superintendents are so committed to their jobs they often will forego plans with their family to go back to work to resolve a situation. Superintendents will often go years before taking time off to be with their family because of the commitment to their golf course. Superintendents will often allow staff members to enjoy a leave of absence, knowing full well that he/she will have to do the work of the missing staff member, as well as work already scheduled for themselves. I could go on for quite a long while, but there isn't enough space to do so. We've all at one time or another had to make these choices: work or home, home or work, what comes first?

Most golf course superintendents think this is the way it has to be. Many were taught in this manner and many superintendents continue to teach their profession in this way. Always the one to respond on a moment's notice. Always the one to be the martyr, allowing staff the necessary rest and relaxation that we feel is not necessary for ourselves. Always the one putting family life on hold to be at work. Always committed, even when it means a difference between being able to hold one's personal life together. Always the one to respond even when feeling ill.

I fell prey to this lifestyle for many years and no matter how many people told me what a nut I was, I refused to listen. How could they understand what I was dealing with? They just didn't understand. And in the process, I was always going back to work and I missed the greatest moments of both of my daughters' lives, which was their early years. You can't get those times back. There are no second chances. And because of this lifestyle, in 1986 I became so ill from not taking care of myself, I had to be driven to the hospital by a staff member to deal with an infection that knocked me back a few notches.

When I look back, this was the beginning of the change in my philosophy in taking care of myself and in the way our golf facility was maintained. It was then that I began to force myself to take better care of myself, to take time off during the summer with my family and to start delegating the work that I thought only I could do. What I discovered in this transition is this: When members of the staff are allowed an opportunity to take on additional responsibility and to learn to carry out new assignments, they feel better about themselves, they become more energetic to carry out menial tasks because they have something more tangible to look forward to, they are more willing to improve the quality of the service to the facility, they become more willing to take on other assignments and I was able to finish my personal work assignments and to schedule time away from work to recharge my batteries. Through this process I discovered the golf course can survive without my being there all the time. That was a hard pill to swallow at first because of the Superman image I had developed through the years.

Too bad I hadn't learned sooner from Mr. John Kosmalski, the Golf Course Director at Riverview Highlands until 1977 and later the superintendent at Travis Pointe Golf Club in Saline, Michigan. John was great at letting me and the other staff members learn to carry out our duties without overshadowing or overcorrecting the task. He simply told us what he needed, spelled out the details and then let us carry the order out. If it wasn't quite finished in the manner he wanted, he made sure the same person was scheduled to finish the task. Now I'm sure John experienced moments when he felt he must go out to finish work that was not completed on time or satisfactorily, but in looking back, he allowed us to complete the work, making sure we had every chance to learn the proper procedure to carry out the job from start to finish. Thanks for the lesson, John. It makes so much sense now, more than ever. It's too bad I didn't start practicing this sooner.

Recently, I came across some inspirational tapes by a man named Jim Rohn. The title is "The Art of Exceptional Living." I've listened to a few inspirational tapes and read some books on the subject, but never have I come across such a wealth of information about living better. Some of his messages make so much sense it makes you wonder why you didn't think

of it yourself. It would take some doing to write out his entire message. Instead, some of the useful information from those tapes is listed below.

- What you become is what makes you valuable. Improving upon yourself can only make you more valuable.
- Work harder on yourself than you do on your job. Now this is a hard philosophy to understand until it is attempted. This is not a recommendation to ultimately bring more recognition your way. Instead, it is a culmination of your ability to dig deep inside yourself to discover who you are, what you stand for and what you're going to do to improve upon what you have become. In the process you become much better at what you do at work without even trying to improve on that part of your life.
- Develop a philosophy for everything you do. If you don't, you will be at the mercy of all the other people who have developed their own philosophies and in many cases will influence others around you solely on their will to control you and not necessarily on their knowledge of what you deal with on a daily basis.
- Take better care of yourself. Eat better, exercise, and take time away from work to make yourself more productive at work. Vitality is a major part of success. People judge you by your appearance. That's human nature.
- Discipline yourself to finish what you start. Every new discipline affects the rest of the disciplines in a positive way. The greatest value of discipline leads to self esteem. Discipline is the biggest step toward change.
- Stop procrastinating. Let go of this self-imposed limitation. Putting off leads to disaster.
- Success is 10% inspiration and 90% perspiration. Anyone who has tried to improve upon themselves realizes that personal change is very difficult. Mr. Rohn suggests trying to change only one or two habits at a time. The major step to achieve personal change is discipline; simply finishing what we start.
- Discover other interests away from work. This is easier said than done if one has lent all their extra time improving their golf maintenance skills. The other interests, will however, take your mind off of the nagging problems that occur at work.

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- Don't try to understand everything people do. Know that some people do and some people don't, some people will and some people won't, some people can and some people can't. Don't try to straighten this stuff out. Accept it and leave it alone or it will drive you crazy. The only one you can change is you.

- Never stop educating yourself. Even Dale Carnegie professes to retain the certifications that helped you advance to where you are today. You never know when these certifications will come in handy. Education is the only way to keep up with one's industry and at the rate our industry is changing, missing out on one year of education is a major mistake. One can never know too much. You're dealing with mother nature and who knows what she has in mind. The most successful superintendents succeed by keeping themselves current with the industry through education.

As I mentioned, Mr. Rohn's message is too immense to list in this article, but it makes so much sense. Those of you who I already know how to live this way, you are the lucky ones. Many of us among you have to be trained to live better, but it's never too late. Mr. Rohn's tapes can be ordered by calling Nightingale-Conant Corporation in Niles, Illinois at 1-800-323 5552. We bought a set of these tapes recently for our staff to use and discovered the cost to be \$59.95 plus tax and shipping.

I hope this information will be useful to help the members of the Greater Detroit Golf Course Superintendents Association and thanks for the conversation, Kate. Hope to see you soon.

Mark Your Calendars Turf Field Day 1997

Gregory T. Lyman

Turfgrass Environmental Education Specialist

If you hear the phrase "Turf Field Day" and automatically think of the third Thursday in August, then I would congratulate you for your recognition and participation of this event. However, as a signal that our system has become a bit too routine, it's time to change the system!

The 1997 Turfgrass Field Day has been set for Thursday, August 28. Please mark your calendars and join us for an exciting and productive day. The format for the event will be similar to previous years, with a few new enhancements. The morning will feature two concurrent research tours - one focusing on golf turf research and the other displaying commercial and sports turf management research. After a hearty barbecue lunch at high noon, there is an outdoor industry trade show featuring a wide variety of turf supplies and equipment. The afternoon agenda will also include an auction that is expected to be the biggest auction of turf equipment and supplies in field day history.

Please make plans to join us for the day and bring your employees, employers, or key members. A registration brochure will be sent directly to all GDGCSA members during the early summer. Stay tuned!

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IRRIGATION SCHEDULING: GETTING THE MOST FROM YOUR CENTRAL CONTROLLER

By: David B. Beck, P.E.

David B. Beck & Associates, Inc.

Ann Arbor, Michigan

Over the past 20 to 30 years, irrigation on golf courses has made many strides toward providing an optimum growing environment for turf and landscape ornamentals. Thirty years ago, irrigation was labor intensive, offering little control over distribution or depth of application¹. Innovations in sprinkler technology, pump and pump control technology, electronics, and now computer applications have transformed golf course irrigation into complex and expensive water management systems which when taken to the extreme, can virtually operate without human input. However, the majority of installed golf course irrigation systems use valve in head technology with non-computerized central control - essentially 70's and early 80's technology. Inherent problems plague these golf course irrigation systems and result in poor growing conditions, drainage problems, wasted water and power, not to mention endless management headaches for superintendents. With all the responsibilities of a superintendent, additional problems caused by improper irrigation scheduling and water distribution must be minimized.

To provide water management and scheduling practices which minimize adverse impacts and promote a healthy turf growing environment, we must first understand the problems with valve in head systems. High water application rates and poorly scheduled water application are common on almost every golf course regardless of control system and create enormous problems with turf cultivation and course playability. Typically, sprinkler application rates for golf course systems are in the neighborhood of 0.6 inches of water per hour while soil intake rates are much less, in many cases, as low as 0.10 inches per hour. Symptoms of the high application rates can most readily be seen on courses with mounding and sloped areas. Tops of mounds and side slopes are always dry while low areas are always wet and many times swampy. In most cases, these wet and dry areas are incorrectly blamed on differences in water use by the turf. In reality, turf water use between tops of mounds and bottom of mounds is relatively the same instead the applied water moves off the slope before it has a chance to infiltrate and accumulates in the low areas. On courses which are virtually flat, irrigated areas remain marshy with puddles for many hours or even days after irrigation.

Due to the nature of the systems and not necessarily the irrigator, problems associated with high application rates are common on most golf courses. The results are problems not generally associated with irrigation including improper drains, diseases, fertilizer leaching, weeds, etc. Luckily, high application rates are easily overcome by simply and slightly changing water application and scheduling methods. By simply changing the method of irrigation application and without spending a dime on additional equipment, dramatic improvements will be seen in turf quality. Poor irrigation scheduling is common on golf courses due to lack of water use information. Currently, instruments such as weather stations which measure turfgrass water use are found only on high end courses, due to their relatively high cost. The typical superintendent is left to guess on plant water use. If the guess is high, the course gets wet, if the guess is low, the irrigator may have to play catch-up and further complicate the effects of high application rates. Several low cost methods for estimating evapotranspiration (ET) or plant water use are available with instruments such as the ETgauge, computer software, and local extension and agricultural services. All golf course superintendents should have a reliable source of daily water use information on which they base all irrigation decisions².

What techniques can be employed to minimize the low intake rates of soils and the high application rates of sprinklers? The most obvious is to reduce application rates so that they either match or are below soil intake rates. Manufacturers are developing sprinklers which provide application rates which more closely match soil intake rates³. However, the new sprinkler technology will only be available for new installations or complete systems replacements; therefore, water management and scheduling techniques must be employed on existing systems. By using a phenomena of the soil wetting curve^{4,5,6,7}, resourceful irrigation management can dramatically improve water distribution efficiency. Cycling techniques (the use of multiple start times) take advantage of the higher initial intake rates. Irrigation systems can be set up with cycle times to apply 1/3 or 1/4 the normal application of water and use multiple start times to provide the required total depth. As an example, if sprinkler run times for your course are 20 minutes per irrigation, use five minutes on the field satellites and use four start times on the central controller. Estimate the depth of application for that five minute run time. If the sprinkler application rate is .6 inch per hour (typical for a valve in head system), five minutes of sprinkler run time translates to approximately .05 inches per cycle. Now daily applications can be regulated through the number of start times at the central controller. If your daily water use is .20 inches of water, use the correct number of start times to apply that depth of water. System balancing will be required. Balancing refers to matching water application depths to areas throughout the golf course, i.e. south slopes have higher water use rates than north slopes. It will be necessary to adjust the run times at the field satellite to compensate for areas of high water use, and areas for low water use. Simply adjust individual stations run times up or down as required for the turf conditions being irrigated. Areas such as south slopes will require more water due to a more direct sun angle and sprinklers will require longer run times while areas such as north slopes and drainage swales will require less sprinkler run times. The balancing process may take up to a full season to achieve, but once the system is balanced, very rarely are further adjustments necessary since areas such as south slopes will almost always require more water than north slope areas, regardless of daily weather conditions. All daily and seasonal water adjustments will be made by the central timer.

(continued on page 21)

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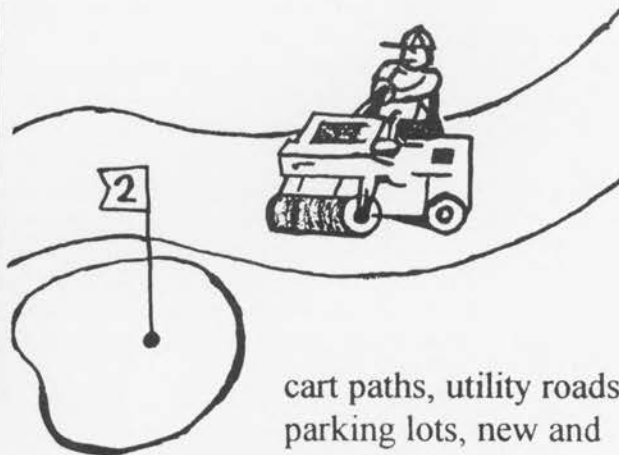
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Irrigation Scheduling (continued)

The total time required to irrigate the golf course will be the same or less than with non cycling techniques⁸. Remember, even though three or four start times are used, station run times are one third or one fourth of previous run times so less time is required to step through the controller. To calculate when to set start times, add all the station times on a field clock. Five minutes per station times 12 stations per controller is 60 minutes. Since your irrigation system probably will not handle the flow required to operate all controllers at one time, start half the controllers at 10:00 p.m., they will finish at 11:00 p.m. Start the second half of the controllers at 11:00 p.m., they will finish at 12:00 a.m. Start the first half again at 12:00 a.m. and so on until 6 a.m., when .2 inches of water will be applied. (This is an example only; your actual water application may be more or less based on your system, location, and water use requirements.) Now look at what has effectively happened to the application rate. If we add .05 inches of water at 10:00, the next .05 inches isn't applied until two hours later. We have now reduced our application rate from .6 inches per hour to .025 inches per hour.

In Michigan, water use rates vary dramatically from day to day. As mentioned earlier, all daily and seasonal water adjustment will be made by the central timer. Each afternoon during the irrigation season the superintendent needs to make a decision as to how much irrigation will be required for that night. Irrigation is always a replacement of soil water used since the last irrigation or rainfall. There are many instruments at and sources of water use data which can help in making the irrigation decision. Once obtained, depth of application can be regulated to match seasonal and daily water use requirements by changing the number of cycles or start times. During a cool period use one or two cycles, during a hot period use three or more cycles. Simply changing number of cycles to regulate depth of application instead of station run times. A second and more preferable method may be to skip one or more nights between irrigations and apply the maximum number of cycles to replace the soil moisture. Remember, field station run times remain the same unless an individual area is wetter or dryer than the rest of the course. On a golf course all daily adjustment takes place at the central controller with number of start times or days between irrigation while all differential water use on the course is compensated at the field controller. If the system is unable to keep up with the water use during the peak irrigation season, simply add one additional cycle to the irrigation, which will result in an increased water window. By changing the satellite timing and running more sprinklers longer, the irrigation system will over tax hydraulics, resulting in more problems such as low pressure and sprinkler donuting. The proper way to exceed an irrigation system's designed total application of water is by extending the water window. However, with improved irrigation techniques, irrigation efficiency improves and the water window decreases because less water is required and smaller run times are used.

This cycling method of applying water is a powerful tool to the superintendent and basically emulates the control offered in modern computer controllers. It was the concept conceived during the development of the first golf course central controllers in the 1960s⁹.

Almost all non-computer centrals have a multiple start feature. Implementing this technique will solve many of your poor coverage problems and wet and dry areas. Another benefit of cyclic irrigation is that the wind seldom stays at a constant speed or direction for an 8-hour irrigation period¹⁰; cycling technique allows water to be pushed around in many different directions, resulting in a more uniform sprinkler coverage.

If the symptoms of high application rates and improper management of daily water application are prevalent on your golf course, try this simple technique; it works! It may require one irrigation season to properly balance all the stations on the golf course, but you will see immediate results upon its implementation. Divide your current station times by three, use the new time as your station time and set three start times on the central controller. Start cutting back on the water you apply. In most cases you will find that overall depth of application will be significantly less, resulting in lower water costs, lower power costs and an improved growing environment for the turf¹¹. Try this technique on one of your central clocks, convert all satellites to the cycling. Once you feel comfortable with the technique and you see the improved turf and playing conditions, convert the rest of the clocks.

¹ Hunter Industries. Innovations in Irrigation. Product Literature 1992

² Duble, R.L. "Water Management on Turfgrasses". Plantanswers Web Site, Texas A&M University URL: <http://aggiehorticulture.tamu.edu/plantanswers/turf/publications/water.html>

³ Beck D.B. "Future Developments in Golf Course Irrigation". *Golf Inc.*, March 1993 Volume 2 Number 3.

⁴ Duble, R.L. "Water Management on Turfgrasses". Plantanswers Web Site, Texas A&M University URL: <http://Maggiehorticulture.tamu.edu/plantanswersturf/publications/water.html>

⁵ Corey, A.T. "Mechanics of Immiscible Fluids in Porous Media". Water Resource Publications 1986. Chapter 2.3 Dependence of Saturation Upon Capillary Pressure. Page 35

⁶ Schwab, G.O., Frevert, R.K., Edminster, T.W., Barns, K.K. "Soil and Water Conservation Engineering" John Wiley & Sons 1981. Chapter 3.5 Predicting Infiltration. Page 53

⁷ Jensen, M.E. "Design and Operation of Farm Irrigation Systems" American Society of Agricultural Engineers 1983. Chapter 12.3.4 Soil infiltration Characteristics. Page 454

⁸ Beck, D.B. "ET Scheduling Simplified: Stepping up Runtimes". *Irrigation Business and Technology*, October 1996. Volume 4 Number 5, p.14

⁹ Bean, E.L. Economical Use of Water, Proceedings of the 36th Northwest Turfgrass Conference. 1982

¹⁰ Midwest Plan Service Structures and Environment Handbook. Eleventh Edition 1983. Wind Speed Data p. 901.5

¹¹ Snyder, Richard L., Schwanki, L.J., Shaw, D.A., Kabashima, J.N., Harivandi, M.A. "Turfgrass Irrigation Scheduling" Monograph, Cooperative Extension, U.C. Berkeley.

Heritage Award Essay

In 1996 GDGCSA initiated the Heritage Award to recognize individuals in non-turf related post graduate secondary education, whose parents are members of our association. The recipients are selected on the basis of an essay. This year's participant's essays were based on their response to the following question: ***Describe your own perceptions of the role of golf in American society today, and how your life has been impacted by your parents' involvement with this industry.*** Award winners for 1996 were: Alison Dushane, daughter of Kevin Dushane; Elizabeth Edgerton, daughter of Mike Edgerton; Jetti Fields, daughter of Don Fields; Kerry Skaife, daughter of John Skaife. One of the winning essays will run in each issue of *A Patch of Green*. Applications for 1997's award will be available from Kate Mason after August 15th. If you have questions about the Heritage Award, contact Awards Chairman Rick Murphy, CGCS.

Essay by Elizabeth L. Edgerton

The American society is one of constant change and constant hustle. To be able to escape the everyday routine of life is treasured. Everyone needs a place where they can go to set their mind at ease and enjoy life. There is no better place on earth to do this than the outdoors, in the midst of the natural beauty of our land. Golf is a sport of exquisite beauty and enjoyable fun. Golf courses trap the breathtaking beauty of our natural environment, providing us with an escape from our everyday routine. Our world is becoming similar to that of an enormous cement parking lot, and is becoming harder and harder for us to find a place that provides us with all the luxuries as that of the sport of golf and its playground.

Golf is a sport that everyone can enjoy. And with the use of the handicap system, everyone can compete with others of any age or skill level. The golf industry is growing, drawing more and more people each year, and the answer is obvious why. Life is for us to enjoy, and with our demanding world in such chaos, one must have an escape. Golf is the perfect escape and will continue to grow in the years to come.

My father is the golf course superintendent of the prestigious Meadowbrook Country Club and being so, has taught me many great qualities which I will carry with me throughout my life. My father's hard-working ethic is one that I value most. He has shown me how to be a

leader and to take charge of any situation. With his demanding job, he has taught me never to give up and to always keep a positive attitude. He has also taught me that everyone is equal and everyone should be treated the same. Not one person should be respected higher than another, for teamwork will get the job done faster and better. I have taken his work ethic along with me, letting them shine in my athletics, which have played an enormous part of my life.

Taking after my father, I was brought up to love and appreciate our environment. The natural beauty of our land is the world's most beautiful treasure. With my father's job, he has shown me many different ways to preserve the beauty of our earth, for, to us, it is our life support system. I have learned many ways to compost grass clippings, leaves, branches, even garbage. Without my father, along with his profession, I would not have the know-how to do my part in protecting the world that we all live in and share. My father's career has had nothing but a positive impact on my life. I respect him in every way and I could never thank him enough for all he has taught me. I just wish every child could grow up with a hard working, positive, fun-loving role model as I did.

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The Cutting Edge

by Stu Cavendar

By far, the one piece of equipment that most people have questions about is their spray units. Most of the questions arise from it not being a piece that is used on a regular basis like a greensmower or fairway mower would be used. Consequently, each time we need to spray it becomes a learning experience.

In order to simplify, I would like to cover some basic configurations of how spray rigs are built and the components that go into them and their effect on spray application. There are manual sprayers, computer controlled sprayers, and electronic valve sprayers. All of these use different components to spray; however, they all have one thing in common. The spray rate is determined by the orifice size of the nozzle, the system operating pressure and ground speed of the traction unit.

The manual system is just that. You must manually open the valves for each boom in order for them to operate. Pressure is determined by using a by-pass valve in line after the pump to divert fluid back to the tank and adjust pressure. The more fluid you divert to the tank the lower the pressure will be through the spray system. Ground speed is a critical element in this type of system because, with nozzle size and pressure manually set, any change in ground speed will affect the rate at which you are spraying. Most manual sprayers will be installed on machines with manual transmissions instead of hydrostatic transmissions. Many times this is done for budgetary reasons. However, it is also somewhat easier to maintain a constant groundspeed with a manual transmission.

At the other end of the spectrum of sprayers is the computer controlled spray system. Instead of manually turning on valves to move fluid through the system, you simply turn on the three boom switches and the master control switch (if necessary) and spray. Nozzle size, as with the manual system, is determined beforehand. Pressure is increased or decreased through the use of a motorized control valve that opens and closes as needed to allow more or less pressure to the booms. The great benefit of this type of system is that the spray system controller will adjust pressure to compensate for any change in ground speed in order to give you a more precise application of product. When used properly, this is the most efficient and exact system for spray applications.

In the middle of these two is what is called an electronic valve spray system. It incorporates the electronics to turn the booms on through switches and also uses a motorized control valve to adjust pressure. While pressure can be adjusted electronically, it does not happen automatically. Therefore any change in ground speed will not be compensated for. The electronic valve set-up is closer in kind to the manual spray system with the exception of instead of manually opening and closing valves to turn on booms and adjust pressure, you use electronic switches.

With any spray system you have, the most important factor in component performance is cleanliness. Following each session of spraying, the entire system should be flushed and cleaned. Be careful not to get any of the electronic controllers wet, as this may affect their operation. In the case of spraying granule agents, it may be necessary to remove and disassemble components in order to clean them sufficiently.

No matter what kind of spraying configuration you have, your application rate is determined by nozzle size, system operating pressure and ground speed. Some require more or less effort on the part of the operator but they will all get the job done.



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Board Meeting Knollwood Country Club Tuesday, March 25, 1997

Finance (Szyndlar)

Assn Checking - \$1,122.30
Savings - \$25,601.39
Foundation Checking - \$980.43
Savings - \$1,194.87

Membership (Hock)

Membership 414. Applications approved-4

Editorial (Dorner)

'97 Patch of Green- Spring Issue to be mailed April 14.

Survey (Szyndlar)

Survey results have been tabulated. Board will be evaluating and sharing results in future POG.

Education (Murphy/Jones)

Some members questioning cost of meetings. Next meeting flyer will contain statement noting that meeting prices are set to cover only necessary expenses. GDGCSA is not making money on meetings.

Special Olympics (Hock/Thommes)

Date: Friday, May 16
Site: Bald Mountain GC
Vendors package mailed out. Committee is contacting them for their support.

Clothing (Murphy)

GCSAA will be accepting a one-time order from the associations for logoed clothing. Members will receive a catalog. Murphy will take all orders. Notice to appear on next meeting flyer.



Board Meeting - Knollwood Country Club Tuesday, April 22, 1997

Finance (Szyndlar)

Assn. Checking - \$517.72 Savings - \$31,571.53
Foundation Checking - \$976.23 Savings - \$ 1,197.48
Budget approved for 1997 - \$113,663.00 1996 Financial
Statements will be published in May/June POG

Membership (Hock)

Membership 418. Applications approved - 5

Member Relations (Hock)

Upon approval of application of membership and payment of dues, new members will be invited to attend their first meeting. There they will receive a New Member package, which includes a Membership Directory, Member Certificate and Membership Card and be introduced to the members. When attending this meeting, 1/2 of the yearly attendance requirement will be fulfilled, as stated in association by-laws.

Editorial (Dorner)

Patch of Green - Deadline for the May/June Issue is April 25.

Education (Murphy/Jones)

June 16. Supt. Championship - Site TBD. Committee will be planning the 1998 Calendar in September of this year.

Awards (Murphy)

John Walter Award - Mike Jones recipient
2-yr. Program Scholarship - Eric Sowatsky
4-yr. Program Scholarship - Matt Haberkorn
Heritage Award - Two scholarships will be given for \$1,000 each. Applications will be available Aug 15.

Job Referrals (E.S.)

Rate of \$125 does not cover costs. Board approved increase. Any referral included with another mailing will remain at \$125. Referrals going out ASAP and separately will cost \$175.

Special Olympics (Hock/Thommes)

Deadline May 12, 1997. Member Package for donations and golf entry went out April 12. Celebrity Guest Dave LewAllen, Channel 7 Sports.

Golf Day (McKinley)

Date Monday, Oct 6. Sites - Bay Pte, Birmingham CC, Edgewood CC, Orchard Lake CC, Plum Hollow CC

Ethics (Delcamp)

Board approved adoption of GCSAA Code of Ethics as GDGCSA Code of Ethics. Will be published in POG



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NOTICES

Congratulations to Jim Vandenberghe of Links of Novi and Denise Leatz on their May wedding.

Condolences to Gordon Nelson of Lapeer Country Club upon the death of his father.

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ROBBINS, DARRICK, pg. 61
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GDGCSA 1997 Calendar

June 24	Association Championship	Coyote G.C.
July 8	Joint w/Western MI GCSA	Hawk Hollow-Lansing
August 7	"The Invitational"	Links of Pinewood
August 19	Annual Picnic	Detroit Zoo
Sept. 22	Annual Business Meeting	The Wyndgate
October 6	"The Big Event"	Bay Pointe G.C. Birmingham C.C. Edgewood C.C. Orchard Lake C.C. Plum Hollow G.C.
October 27	Superintendents Roundtable	TBA
Nov. 11	GCSAA Regional Seminar Wetlands and Golf Courses	Novi Hilton
Dec. 9	Superintendents Only	Birmingham CC
Dec. 13	Annual Christmas Party	TBA

Mid-Michigan Turf Association 1997 Schedule

June 17	Holly Meadows G.C., Capac
July 23	Devils Ridge, Oxford
August 6	Currie Municipal G.C., Midland
September 29	PohlCat Championship G.C., Mt. Pleasant (Fundraiser)

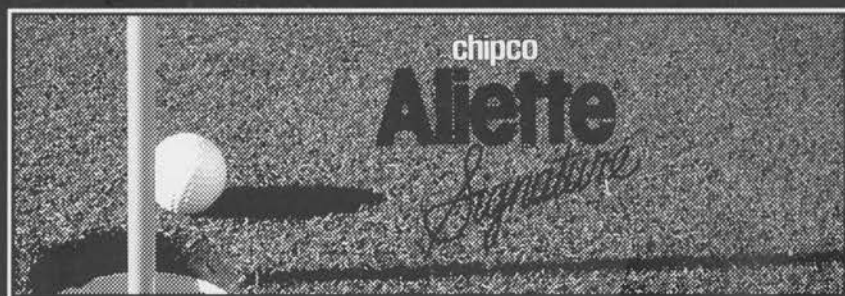
Northern Michigan Turf Managers Association 1997 Meeting Schedule

July 15th	Green Briar - Lupton
August 18th	Eagle Glen - Farwell
September 9th	Belvedere - Charlevoix
October 8th	Mistwood - Traverse City

Western Michigan GCSA 1997 Calendar

June	Open
July 8	Hawk Hollow (w/Detroit)
Aug. 18	L. E. Kaufman
Sept. 15	Blythefield CC (Golf Day)
Oct. 6	The Moors (Annual Meeting)
Nov. 1	PohlCat (Fall Party)

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