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FRONT COVER

Winter scene from yesteryear of Pottawatomie Golf Course, hole no. 6.
(Photo by Steve Jorstad.)

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Cathy Miles Ralston

The Midwest Association of Golf Course Superintendents (MAGCS), founded December 24, 1926, is a professional organization whose goals include preservation and dissemination of scientific and practical knowledge pertaining to golf turf maintenance.

We endeavor to increase efficiency and economic performance while improving and enhancing the individual and collective prestige of the members.

The MAGCS member is also an environmental steward. We strive to uphold and enhance our surroundings by promoting flora and fauna in every facet in a manner that is beneficial to the general public now and in the future.



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Winter Highlights

Winter's end is in sight; the reels are sharpened, the equipment looks brighter, requisition for new equipment is on the horizon, and the budget is pulsing with new figures. I am starting to get the itch for a new season after the dreary month of January. January is always a slow month for me, following on the heels of December—a short month with the holidays. January is most of the time sunless and cold, a good month to work on the budget, read some trade magazines or a book.

Winter abounds with educational opportunities, so take advantage, especially if you are among the GCSAA Class A members on a three-year renewal cycle and facing a June 30, 2006 deadline to fulfill renewal requirements.

That said, I am not a big reader of books, but during the winter months I try to read a couple of books that enhance my well-being and improve my self-image. I just finished a very entertaining book by Ben Wright, *Good Bounces & Bad Lies*, an autobiography of his adventures around the game of golf. A book that offers a lot of inspiration for the soul and opportunities to reflect on self-image is the book by Joel Osteen, *Your Best Life Now*. So grab a magazine or a book and catch up on some reading to pass the time.

The GCSAA National Convention (Golf Industry Show) is happening during the month of February in Atlanta and hopefully you will be or were able to attend. Just a reminder, the hospitality room is being held on Thursday (February 9) and Friday (February 10) at the Hyatt Regency Atlanta on Peachtree Street. Expect highlights to include opening session (Thursday the 9th at 8:30 a.m.) for presentation of the Old Tom Morris Award to Dr. Joe Duich, developer of A and G bentgrass varieties, and Innovative Superintendent Session I (Thursday the 9th at 7:00 a.m.) when Jon Jennings of Chicago Golf Club speaks on "Creating and Presenting a Self-Evaluation."

The Silent Auction is also worth checking out; I have been participating for the last three years and really enjoy this event. I have received some items at a lower cost and saved some money for the club, plus the proceeds go to The Environmental Institute for Golf.

GCSAA Class A members may be interested in this update. Members who are on a three-year renewal cycle have until June 30, 2006 to remain a Class A member. Members must attain 3.0 points (1.2 must be educational points) and also provide proof of possessing a pesticide license; if these requirements are not fulfilled by June 30 of this year, you are reclassified as a Superintendent Member. Please check with GCSAA by going to "My Member Central" on the Web site and viewing your current transcripts. If you have any further questions, please contact Dan Sterr (membership chairperson) or myself and hopefully we can resolve your problem.

An Assistant Superintendent Workshop takes place on February 23 at the Midwest Golf House. The theme is "Weather." Superintendents, please inform your staff about this event; give them a chance to take a break to get educated and enjoy their colleagues. Thank you.

I'm going to leave you with a few quotes by famous people. Lee Trevino: "I'm not saying my golf game went bad, but if I grew tomatoes, they'd come up sliced." Sam Snead: "These greens are so fast I have to hold my putter over the ball and hit it with the shadow." Tommy Bolt: "Putting allows the touchy golfer two or four opportunities to blow a gasket in the short space of two to 40 feet."

Have a safe trip and hopefully I will see many of you in Atlanta.



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I Hated Math!

When I was in elementary and high school, I struggled with math. I found it hard to understand and comprehend. Each year it was my poorest-performing subject; no matter what I did to improve, I could not do better than Cs in math on report cards (had Ds, and close calls, too!). I had little retention of concepts and principles outside of the basics of adding, multiplying, dividing and subtracting. Algebra was like Greek to me. Numbers with letters, and those letters had numeric values that were unknown and needed to be solved. You're kidding me! Throughout it all, math was hard work, and I hated math.

The lights of understanding math suddenly switched on for me during a trigonometry class I was enrolled in as a college freshman. There, I had an instructor who recognized my mathematical shortcomings after my first test and recommended I join him and some fellow classmates outside our M-W-F lecture schedule for a trig study group. He said, "It's one or two hours extra per week, give it a try, we're just trying to make Trig easier by making it fun!" Math, fun? I hated math!

Just wanting to get through Trig, I decided to join the group. I saw this study group as an opportunity to gain a better understanding, and a few "brownie" points with the instructor, so I went to the study sessions. We worked as a team, discussing the concepts, theory and practicality involved in trigonometry, solving problems, doing lab work and homework. As it turned out, the study group was a smash-hit for me! A home run! For the first time in my life, math had a deeper meaning. It was clearer and complete. It made sense, and it was because of the team effort.

I learned some very valuable lessons about working as a team during those study sessions that semester. We all had common goals and weaknesses; we all demonstrated a discipline and commitment to improving our understanding and knowledge; and we enjoyed ourselves. Slowly our fears of failure and uneasiness faded away. I passed Trig with an "A" that semester and had a greater understanding and comprehension of math concepts like I had never had before.

I am certain that the current MAGCS Board of Directors, like all those who have served our Association in the past, have all felt compelled to serve, to give back and to be part of this team as I have, and I would strongly urge every MAGCS member to support our Association's standing committees by volunteering your time and talents within one of them. With an attitude of servitude, the needs of the team become more important than those of any one individual, but it's not just the team that benefits—it's individuals too. As I learned during my college Trig class, that is the essence of teamwork—service and commitment to others for the betterment of the whole.

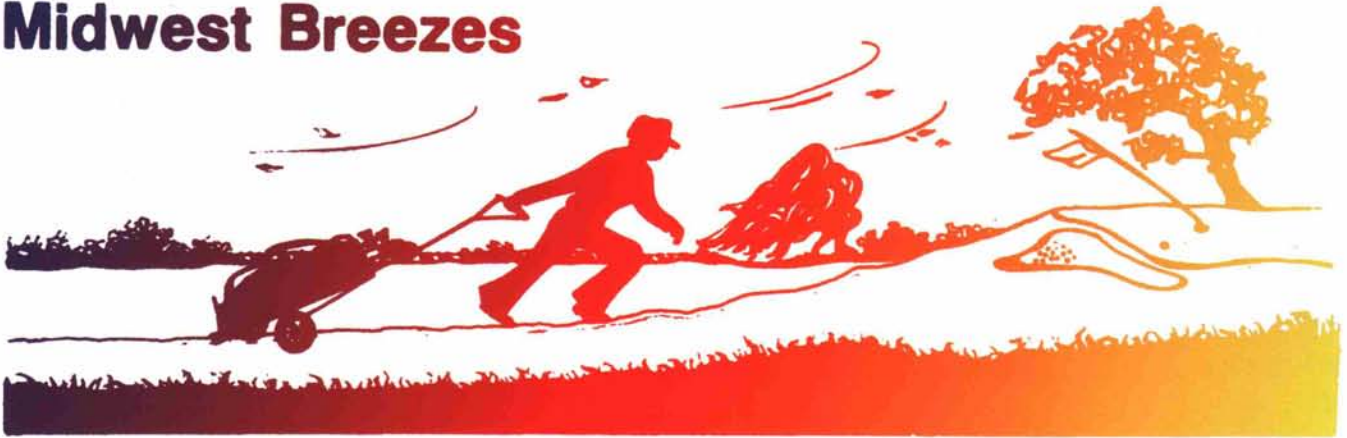
I am proud to serve on the Midwest BOD as a director and I relish the opportunity. When you add it all up, whether it's math or an attitude of servitude, the equation is clear, complete and makes sense.

Have a healthy and prosperous 2006.



*Add it up . . .
you plus your
participation in
MAGCS equals
a stronger
Association.*

Midwest Breezes



Bunker Renovation Gives Barrington Hills Country Club a New Look

This past fall, Barrington Hills Country Club (BHCC) renovated the bunkers on all 18 holes and the chipping green. The course was built in 1921, thus some of the original bunkers were out of play due to tree growth over the years. The original bunkers also had poor sand quality and no drainage.

The renovated bunkers, designed by Don Placek of Renaissance Golf Design and constructed by MacCurrach Golf Construction, feature new design, new sand and new drainage. Liners were also installed in cases where erosion would be a prevailing concern.

The new design of the bunkers features both grass-facing and sand-flashing slopes. Construction utilized the pre-existing native soil. Surprisingly, the newly renovated bunkers contain approximately one acre less of surface area. The old bunkers, on average, were 2,200 square feet, and the new bunkers average 1,000 square feet. Also, in instances where existing bunkers were eliminated, extensive bentgrass sod work tied into existing fairway lines, giving the fairways a different shape. Removal of greenside bunkers saw these areas graded and sodded with bluegrass.

Before the project, BHCC contained 61 bunkers. After the renovation, the course tallies 66 bunkers, and four bunkers around the chipping green instead of three. Although these numbers are very close, the project entailed elimination of numerous bunkers and new construction of others in places where there were previously no bunkers, giving the course a new look.

The new design has also created new maintenance procedures for the BHCC staff. Before the renovation, bunker maintenance included daily raking with a Toro Sand Pro, and perimeter mowing with a Toro Sidewinder. Post-renovation, all bunkers are going to be hand-raked and mowed around with fly-mows.

Before construction began, superintendent Mark Bobb decided to test three different types of sand. The types of sand that he considered were Meyer FA-9, North-face and Antioch Root Zone. To get member feedback, we excavated the sand in the bunkers around the chipping green and set up four different plots: one for each type of sand, and one with the original sand. After months of testing and feedback from the members, we decided to go



Sandtrapper II liners were used in cases where sand-flashing slopes presented erosion potential; liners were tucked into the drainage mechanism.

with the Antioch Root Zone because of its consistency and smoothness. It was placed at a six-inch depth throughout the new bunkers.

All the newly constructed bunkers underwent drainage installation. Four-inch perforated corrugated pipe was used in all cases. Due to the fact that the old bunkers contained no drainage, we had to connect new drainage to the pre-existing clay tile throughout the golf course when possible. In all other cases, a 3' x 3' x 3' sump was dug and filled in with pea gravel. Also, all drain tile underwent grading with a laser transit to ensure proper drainage. In cases when the slope presented possible erosion problems, Sandtrapper II liners were put in place. Liner installation occurred only on the sand-flashing

slopes and tucked into the drainage to channel the water into the new drainage system. Six-inch sod staples were installed one inch apart along the seams and edges, and six inches apart throughout the rest of the liner.

Next on the list for the new year is the reconstruction of the 17th green along with the greenside bunkers that were not included in the overhaul project, and new bunker irrigation. We'll also be revisiting green expansions resulting from new bunker placement, and the leveling and repositioning of tee complexes. So look forward to updates on these projects.

—Rob Nixon
Barrington Hills Country Club



After bunker renovation.



Before bunker renovation.

Turnberry's Jim Evans Brings Chemistry Down to Earth

Contrary to Midwest legend, Jim Evans is not a mad scientist. Jim's unique approach to greenkeeping chemistry is actually very sensible and down-to-earth. He may be mad, but he is not a scientist.

For more than 25 years, Jim Evans has been fertilizing his greens, tees and fairways entirely through his sprayers, which are calibrated to apply three gallons of water per thousand square feet solution. To illustrate the creativity of some of Jim's fertilizer mixes, I have outlined one of his fairway applications from May 4, 2005:

| ELEMENTS | PER 210 GALLONS | PER THOUSAND SQUARE FEET |
|---------------------------|-----------------|----------------------------|
| Urea 46-0-0 | 14 lb. | 0.10 lb. Nitrogen |
| Urea Formaldehyde 38-0-0 | 17 lb. | 0.10 lb. Nitrogen |
| Ammonium Sulphate 21-0-0 | 20 lb. | 0.06 lb. Nitrogen |
| Sulphate of Potash 0-0-53 | 83 lb. | 0.67 lb. Potassium |
| 90% Elemental Sulphur | 15 lb. | 0.21 lb. Sulphur |
| Sprint Iron | 7.5 lb. | 2.00 oz. Chelated |
| Iron | | |
| Manganese Sulphate | 1.5 lb. | 0.12 oz. MnSO ₄ |
| Zinc Sulphate | 1.0 lb. | 0.10 oz ZnSO ₄ |

(continued on page 8)

Note that this mixture contained eight different elements and compounds, and a total of 159 pounds of material, in a 210-gallon spray tank!

Jim has discovered that he can add as much as one pound of material per gallon of water in a spray tank, but he emphasizes the necessity of syringing these applications off the leaf canopy before they dry. With any application of this concentration, particularly on fairways, it is important to finish the work before the morning dew evaporates. The dew helps to hold the material in suspension while the sprinklers run through their sequence.

What are the merits of this type of nutritional program and application method?

1) The elements and compounds are being purchased in their cheapest formulations. This is the most cost-effective way to feed greens, tees and fairways.

2) The overall nutrient package may be custom-blended to whatever the soil analysis recommends. When this method is dialed in, it can provide some of the healthiest turfgrass possible.

3) The nutrients are readily available for the plants' use. This gives optimum control of the timing and rate of nutrient release.

4) Because so little of the application is lost to leaching or volatilization, the amount of annual nutrient load (to the soils) can be greatly reduced.

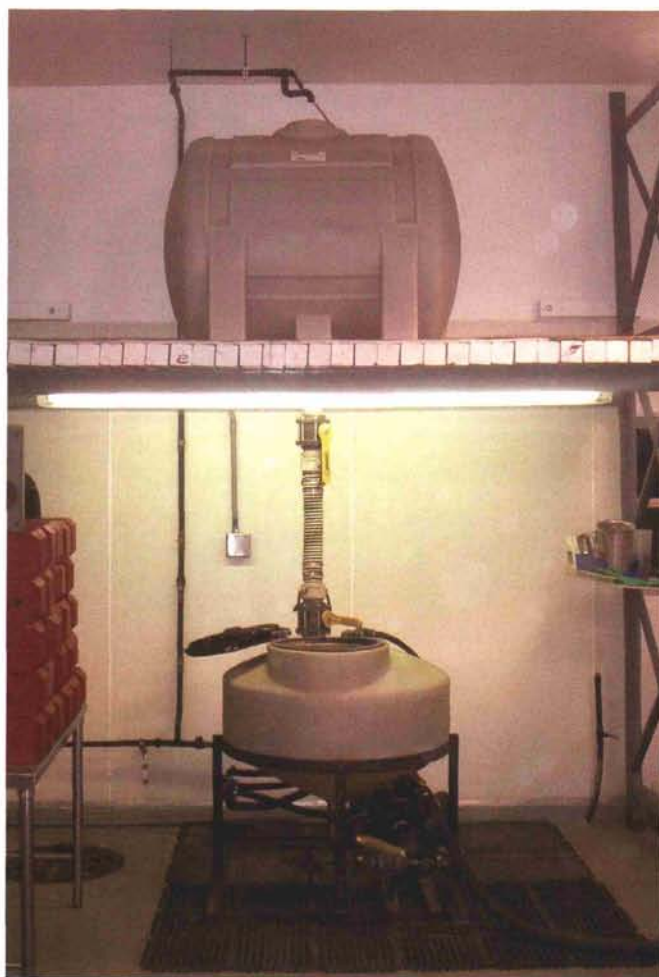
5) These applications do not necessarily require making extra trips out on the course with the sprayer. They can be scheduled along with any other products that may benefit from being watered in, such as wetting agents, growth regulators or DMI fungicides.

The only downside of the program is the amount of time and energy required to load and blend all the products to solution. However, Jim and his son, Jim Junior, have designed a mixing system to simplify and hasten the process.

The system is built with a self-replenishing 200-gallon storage tank and a 75-gallon mixing tank. The mixing tank is instantly filled with water from the storage tank by manually opening a three-inch line connecting the two tanks. A switch is thrown to activate circulation and agitation of water in the mixing tank. Products are dumped into a stainless steel basket inside the mixing tank, which filters out any solids or contaminants that would clog the sprayer nozzles. A gentle agitation bubbler inside of the basket melts down the products as they are added to the basket. An entire 50-pound bag of soluble fertilizer may be dropped in the basket and dissolved into solution in less than two minutes.

After all the materials are dissolved in the mixing tank, a lift-pump and hose connection transfers the solution to the sprayer. The balance of the 210-gallon spray tank is now filled by draining the storage tank through the mixing tank transfer pump. This process effectively rinses any residue that may remain in the mixing and transfer system. With the sprayer full, the operator takes the application to the field while the next load is undergoing preparation in the mixing tank.

—Brad Anderson, CGCS
Midlane Country Club



200-gallon storage tank and 75-gallon mixing tank



Circulation and agitation of water and product occurs in the 75-gallon mixing tank.



Catch-basin in floor with filter screen. The whole floor drains to a 20-foot trough that runs to the catch-basin.

Putting the Shop In Shopping

*"Twas the night of first snowfall, when all through the house
Not a creature was stirring, not even a mouse.
The golf clubs were hung up in storage with care,
In hopes that Father Winter soon would be there.
The supers were nestled all snug in their beds,
While visions of snowflakes danced in their heads."*

The best preparation for the upcoming season can involve laying the groundwork for more efficient summer tasks.

With the summer of 2005 long ago abandoned, winter is entrenched here. Reflecting on last year's golf season, the record-high temperatures, drought, long hours, hand-watering, stress, and complete and utter exhaustion, the anxiety for winter to arrive couldn't have been greater in a golf course superintendent's mind.

Superintendents will use the less stressful winter months in their own ways. Challenges do exist for a superintendent or assistant superintendent during these winter months. The superintendent cannot simply hibernate all winter. The superintendent must "push on," planning and preparing for the 2006 golf season. The best preparation for the upcoming season can involve laying the groundwork for more efficient summer tasks. For superintendents, time still remains for you to use your indoor shop time to create your own "Monster Garage" by innovating with your existing equipment, making it more efficient and productive on your golf course. The recipe is simple.

- A reason.
- An imagination.
- A few shop skills.

Involving yourself in an activity like a "Monster Garage" project will keep your mind active, creating room for learning, and will help you touch up on those now-lost shop skills. Assistant superintendents can benefit from the knowledge of their superintendent or mechanic by applying trades such as design, engineering, welding, cutting and simple mechanics. The result is efficiency and recycling, taking what is present or available and making it better. A few ideas follow.

The Portable Hose Reel

The Portable Hose Reel facilitates an efficient method of hand-watering when it is necessary to move around in short intervals. Basically, a rear-mounted reel makes it simple to maneuver around greens and tees and amongst players. The reel makes it easy to draw out hose and wench in. Thus, this device is an efficient time-saver, never gets tangled, and conserves the strength of rolling, loading and hauling.

Materials:

- (1) cart with bed
- (1) Hannay Reel assembly plus hand crank (optional electric motor)



- (2) 8-foot lengths of durable angle iron for the frame
- (2) pull-action toggle clamps

Construction:

Measure the length of the inside of the cart bed minus $\frac{1}{4}$ " for each side. Measure the width of the hose-reel frame. Cut two lengths of angle iron for the distance of the cart bed, two lengths for the width of the hose-reel frame, and two lengths for the ends, which will act as slots for the frame that is to be mounted into the bed. Weld all the angle iron together into the measured frame. Drill four holes in angle-iron frame to match those in hose-reel frame, and bolt together. Mount toggle clamps on cart and frame. Attach hoses, nozzles and quick coupler and you are ready to hand-water on the fly.

The Plate



The "Plate" is an old 1990 Jacobsen 810 transformed into the ultimate utility vehicle. The Plate is ahead of its time, able to function as a multipurpose vehicle. Redesigned and built in 2003, this beauty features a reinforced aluminum slab and vice mounted on the front for easy work access. The Plate can be used as a mobile work bench, irrigation work station, stepladder, and large-load transporter of flowers, fertilizers and laborers. The design of the front-mounted bench and vice makes it easy to clamp and cut pipe while working out of a hole.

The Leader



The "Leader" is the exact opposite of a trailer. The implement is cut and welded frame made of angle iron and steel mesh. The Leader mounts on the front of an electric 1998 Club Car carryall. The mounting points on the cart are added to the existing frame. The position of this implement makes it an efficient transporter for a walk-behind fertilizer hopper. The front mounting is resourceful, making the loading and unloading of the hopper quick and easy. A special trailer can be added and loaded with product, making it a self-contained transport while avoiding the mess of having both hopper and product in the same bed. Every superintendent knows the danger of spilling fertilizer, and this implement erases that worry.



The Green Machine



The "Green Machine" is the project for our 2006 edition Monster Garage. It will be simply a GM3100 triplex with the reels and hydraulics removed and a 1993 Billy Goat Blower mounted on the front. The Green Machine will be a labor-efficient, productive and time-conserving means of cleaning greens. The Green Machine will also be fitted to drag a co-co mat for use after topdressing. This will decrease the treading of tires and wear marks sustained by earlier equipment.



They say necessity is the mother of invention. This off-season, try some of the above combinations, or develop one of your own, and your own Monster Garage is in business!



References

I would like to thank two local superintendents for their input on this article:

- Joel Purpur,
Park Ridge Country Club
- Erwin McKone,
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