



GCSAA AFFILIATE

Turf Times

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The newsletter from the Northern Michigan Turf Managers Association

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President's Message

WOW! What an educational day! Nothing short of first class. I'm talking about the April 5, 1993 mini conference held in Grayling.

Compliments to Mike Meindertsma and the rest of the Northern Michigan Turf Managers Board of Directors. This group of people have worked hard to provide you, the members, with beneficial information.



President Jeffrey Holmes

If you haven't taken the time to attend these monthly meetings, I would highly recommend it. Our industry continues to change rapidly. The way to keep up with change is to attend seminars, such as ours, that share regulation updates and cultural practices. Most seminars offer recertification credits toward your pesticide applicator license.

On Monday, April 5, 1993, once again, our meeting covered several topics in which each of us needs to be educated.

The day started with an in-depth discussion on grease and oil properties, and how to select the right product for your application. There are certainly many considerations and concerns when selecting grease or oil.

After learning how to lubricate our equipment we became more aware of how to repair our equipment properly. Pat Collins shared some valuable information about paint product safety, prepping procedures for paint application and what type of finish you can put on a vehicle or piece of equipment.

Certainly, with spring upon us, we need to knock the dust off our irrigation pumps and get ready to go. Tom Dunbar walked us through the proper procedures for spring maintenance and startup of the pump station. It was interesting to note that our new knowledge of grease and oil came in handy when we talked about irrigation pump maintenance.

The remainder of the day was covered by Dr. Jim Crum, Dr. Paul Reike, and Greg Lymen from Michigan State University. These three gentlemen covered enough information in three hours to give us homework for three weeks. As always, they provided us with an enormous amount of information. Topics discussed were: distribution of acid nutrients, protecting water quality, and regulation updates on Regulations 636, 637, and 640. The regulation updates were enough to put a person to work full time.

Well, this has only been the tip of the iceberg as far as the information that was covered. I hope this will entice more of you to attend our great seminars. In addition, by attending two of our seminars this year, you would have picked up five credits toward your recertification for pesticide application.

Have a great spring!

Jeffrey Holmes, President

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Does One Matter?



Tom Heid

How often are you asked the question "does one really matter?" I would expect that most would agree that in the workplace each individual/employee has some degree of effect on how well or efficient your particular operation runs. The success of your business is often a result of teamwork. Without teamwork, along with the dedication and commitment of each individual, one's business is likely to fail in

some fashion.

In this ever-changing and demanding field of turfgrass management, professionals recognized the need to work together in solving various problems and issues, while striving to succeed in providing a quality product to the public. This particular need resulted in the formation of the professional association known as the NMTMA.

As in the need for teamwork in the workplace, the success of your association also depends on individual support. Support can be measured in many ways with "individual involvement" being the main criteria for achieving success.

In order for us to excel as professionals in the Northern Michigan Turfgrass Managers Association, it will require more participation and involvement from each and every individual member.

If you have any doubts about how important you are to our association, just consider the following article. (I will give you a hint. If you replace the x with an e the article will read quite well.)

Doxs Onx Mattxr?

Evxn though my typxwritxr is an old modxl, it works quitx wxll, xxcxpt for onx kxy. I havx wishxd many timxs that it workxd pxrfxctly. It is trux that thxrx arx forty-fivx kxys that function wxll xnough, but onx not working makxs all thx diffxrxncx.

Thxrx arx timxs whxn an organization is somxwhat likx my typxwritxr. . . not all thx kxy pxoplx arx working propx-ly. You say to yoursxlf, "Wxll, I am only onx pxrson, I won't makx or brxak an organization."

But it doxs makx a diffxrxncx bxcausx any organization, to bx xffctivx, nxxds thx participation of vxvry mxmbxr.

So thx nxxt timx you think your xfforts arx not nxxdxd, think of my typxwritxr and say to yoursxlf, "I am a kxy pxrson in this group, and I am nxxdxd vxry much!"

Mechanic's Perspective: A Practical Approach For Making Your Own Tractor Weights

by David W. Pretznaw, McGuire's Resort

During the winter months, we at McGuire's Resort become involved with snow removal from parking lots, etc. One problem that we used to face was that our rear wheel drive tractor/loaders would always experience loss of traction due to the slippery surfaces they were operating on. Even with tire chains and loaded tires, our operators found themselves spinning when moving from forward to reverse and vice versa. We needed to find a method which would add weight to the rear ends of the tractors. These weights needed to be easy to make, and be easy to put on and take off.

We decided to utilize the three point hitch on the back of the tractors to hold the new weights. While this is not a new idea, Ron Greenman, Head Golf Course Mechanic at the re-

sort, had some new thoughts on the subject. We would take empty 55 gallon blue plastic apple juice barrels, fabricate the hook-up points out of rolled steel bar stock and flat bar stock, and fill these barrels with concrete. The best part of this plan is that whenever concrete is ordered for the resort, there are always a few yards left over as waste. We just have the barrels ready, and when an order for concrete is placed, the truck is directed to the maintenance building to empty the extra concrete into the barrels.

After the concrete has set up the weight can be put on the tractor. Each weight has been estimated to weigh between 1,500 and 2,000 pounds. This solved the spinning problem, and the tractors' hydraulics handle the new weights with ease.

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Mechanic's Corner

By Ken Hand, Head Mechanic, Cadillac C.C.

A typical problem with older gas-engined Jacobsen F-10's is keeping the front radiator clear of grass clippings. Large amounts of clippings collect against the front of the radiator even with good shields on the mowers. Operators must regularly open the radiator shield and remove these clippings or overheating occurs. We found a simple solution by covering the outside of the factory installed shield with window screen. The small mesh keeps the clippings from reaching the radiator and doesn't hold clippings even when they're wet.

Letters to the Editor

You can communicate directly with the NMTMA and your fellow members by writing to:

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Can We See the Forest For the Trees?

By David W. Pretznaw, Superintendent, McGuire's Resort

From time to time I like to reflect on how my operation is running. It is easy to concentrate on the obvious. Are cultural practices producing the desired effects? Is the equipment being maintained properly? How is the irrigation system functioning? Is everything being watered properly?

Far too often, other small, maybe insignificant things, can and usually do become overlooked. They might not be the most obvious, but may be very critical nevertheless. These might even vary greatly from place to place, depending on the size and scope of our different operations.

For instance:

- Are operators turning off their equipment when refueling?
- Are operators smoking while refueling?
- Do our employees wear eye protection **every time** they use a grinder or a weedeater?
- When our mechanics or assistants are grinding reels and bedknives, do they wear eye protection, respirators, hearing protection, etc.?
- Are we calibrating our spraying or spreading equipment frequently enough, or even at all? Does everyone even know how to calibrate the different types of spreaders?
- Are we disposing of waste oil, antifreeze, batteries, etc., with the proper and approved methods?

These and many more things of this nature are probably noticed by us every day. But do we address them or just ignore them? It is essential that we critique ourselves and our operations on a daily basis. Not only will we produce superior turf and playing conditions, we will also be helping and insuring that we do this in a safe and responsible manner.

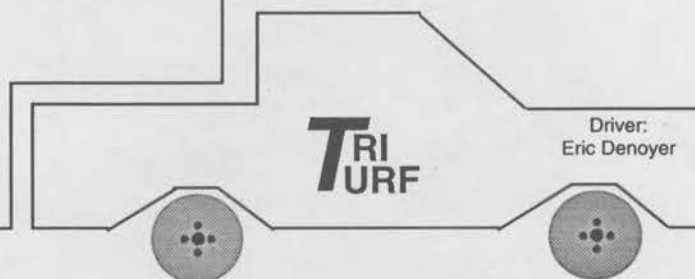
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Proper Planting and Post-Planting Care Are Keys to Establishing Trees and Shrubs Successfully

By Bob Mugaas, Minnesota Extension Service

PREPARATION AND PLANTING

Successful planting starts with proper site preparation. Digging the hole for a new plant is the first step. The hole should be at least 1-2 feet wider than the size of the root system (except for direct tree spade planted trees). A larger hole will allow better root growth, especially in poor soil. Rough up the sides of the hole as wide or wider at the bottom than at the top.

Planting depth is *critical*. For heavy soils, trees and shrubs should be planted at, or slightly higher than, the depth that they grew in the nursery. In poorly drained soils, plants should be planted slightly higher, with soil mounded up to cover the roots. Allow for settling, especially if the hole has been dug deep and backfilled. Air pockets should be eliminated by watering during and after backfilling. Poor soils can be amended with organic material or loamy top soil depending on the improvement needed. Peat is not recommended for poorly drained, clayey soils, as it can act as a sump and draw too much water into the planting hole. Never completely backfill with a soil amendment; only create a transition zone to the existing soil where the roots must

eventually grow. Too much soil amendment can create moisture gradients and cause roots to be confined to the planting hole. Remove rocks and debris from the hole and never put rocks or gravel in the bottom of the hole to improve drainage unless it is connected to a drain tile.

Proper fertilization provides plants with the elements they require for survival and growth. A balanced or complete fertilizer is usually recommended for tree fertilization. Trees and shrubs should be fertilized at the time of planting with a slow release, complete fertilizer, preferably one high in phosphorus. Fertilizer should not be placed directly on the roots, but should be mixed with the backfill. It is best to use a slow-release fertilizer and fertilizer briquettes at the time of planting. These will not burn the roots and will have longer-lasting effects. Follow label directions.

PLANTING THE PLANT

Bare Root and Packaged Stock: Examine the stock and prune away any diseased or damaged roots or branches. Dig the planting hole and backfill with enough soil to hold the
continued on next page



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Proper Planting & Post-Planting Care

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plant slightly higher than the depth it was growing in the nursery. Tamp the soil and center trees with the largest branches facing southwest. Straighten the roots and spread them evenly. Cover the roots with soil, avoiding any clods, rocks, etc. Gently raise and lower the plant while adding soil to eliminate air pockets. When the hole is three-quarters full, tamp the soil and fill with water. This should take care of any remaining air pockets. Finish filling the hole with soil, and then water thoroughly.

Balled & Burlapped (B&B): Carefully set the plant in the hole at or slightly higher than it was at the nursery. The root flare and the top of the ball will indicate original planting depth. Take extra care not to loosen or break the soil ball. Fill the hole three-quarters full, tamping to remove air pockets. Cut and remove *all* twine from around the trunk. Pull burlap away from the trunk and top of ball. Water slowly to saturate the soil ball and to remove air pockets in the backfill. Finish filling the hole with soil. No burlap should remain above the soil surface as it may act like a wick and dry the root ball. Evergreens should not be planted later than October so the roots will have a chance to become established.

Container Grown and Containerized Stock: Carefully remove the container *at the planting site*. Cutting the container may be necessary. Remove all containers, including biodegradable paper-mache pots. Newly containerized stock may be only slightly rooted; the container must be removed with great care so as to not disturb the root ball. In contrast, container grown stock may be rootbound. If roots are growing in a spiral around the soil ball, the plant is rootbound. These roots need to be separated or they will eventually girdle the plant. Make vertical cuts on the side of the ball just deep enough to cut the net of roots. Also make a criss-cross cut across the bottom of the ball. Plant the plant the same as a B&B plant.

Tree Spade: The use of mechanical tree spades has become a common method of tree planting. Trees should be watered thoroughly before moving to hydrate the plant and to avoid soil sifting out during transport. The sides of the planting holes should be roughed up with a shovel, rake, etc., to break up compaction caused by the spade. Trees should be placed at or slightly higher than the original grade to allow for settling. After planting, work loose soil into the area between the hole and the tree plug, and water thoroughly.

Credit - Hole Notes, 5/91

New Book on Maintenance for Golf Courses

Trey Rogers of Michigan State University will be editing a book entitled *Superintendents' Handbook for Golf Course Maintenance and Construction*. The book will be published by Lewis Publishers. It will consist of a "cook-book" format with the chapter topics divided into putting greens, fairways, roughs, wildlife management, equipment, IPM, etc.

Each chapter will consist of "contributions" of maintenance and construction practices that superintendents have successfully used at their golf courses. Contributions will cover areas from tee marker strategy, to philosophy for green committee meetings, to how to build a retainer wall. Contributions will be 1-5 pages in length, and will include photographs to aid in describing the practice.

Contributions at all levels from superintendents across the country will be accepted and reviewed by an editorial board of distinguished superintendents. All contributions will receive full credit.

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Soil - The Miracle We Take for Granted

by Peter Steinhart

It is one of America's most vital resources – a foundation of life. Every cubic inch holds a billion beneficial creatures. Yet we bury it under concrete and let it wash away. We poison it and neglect it, and then play politics with it. We treat it like dirt, although we clearly can't survive without it.

Of all the Earth's resources, the one we take most for granted is soil. It is so everywhere around us, brown and prosaic, so easily found and so easily wasted. Perhaps that's why so many of us think of soil only in the abstract – as something farmers use to feed us.

Those of us who live in the cities are aware of soil only when it becomes dirt, smudged onto our clothes after a picnic or carried into the house on our shoes. Then it is considered matter out of place and something to get rid of.

We bulldoze it out of the way to make highways and to erect shopping centers. We ignore its frailty when we cut timber of build houses on hillsides. And then it comes back to haunt us when it clogs our drains, clouds our drinking water, causes floods or simply falls away beneath the footings of our homes.

The truth is that soil is a resource of astonishing balance, complexity, beauty and frailty. If we could narrow our vision down to microscopic detail and tunnel

into the top few inches of earth, we would be dumbstruck with its mystery and vitality.

There is enormous variety to soil. Experts say that are some 15,000 different soil types in the U.S., and perhaps hundreds of thousands worldwide. They differ on the basis of the kind of rock that weathered into clay and sand to form the soil, the mix of organic matter inside it, the amount of water, the texture and the age. There are rust red soils of the tropics, from which most of the soluble aluminum and iron has been leached. There are dark brown loams in the U.S. Midwest that are made of materials scoured off the top crust of Canada and pushed southward by ancient glaciers. There are North American soils built largely from ancient silts, blown here from Asia on prehistoric winds. There are places where the soil is 200 feet deep and places where it is but a thin film on top of rock.

Living soil is full of air passages that let oxygen, carbon dioxide, and nitrogen circulate. A well-aerated soil may be almost half airspace by volume. There are acres of surface area on the particles of sand and clay. Films of moisture cling to those surfaces, forming ponds and atmospheres that nurture a vast array of bacteria, fungi, viruses and protozoans. A cubic inch of soil can contain literally billions of creatures.

We know many of these creatures because they cause or cure disease. The bacterium *Clostridium tetani*, for instance, causes tetanus, while another, *Clostridium botulinum*, causes botulism. Soil fungi have given us penicillin. Actinomycetes, which are responsible for the sweet toasty aroma of freshly turned earth, provide such useful antibiotics as streptomycin.

But the teeming life of the soil has far more powerful significance than disease or medicine. For it is the bacteria and fungi in the soil that break down the complex molecules of dead organic matter, the cellulose and lignin of wood and leaf, into molecules which plants can use for food. Only the microbes can take the salts out of soil minerals and make them available to plants. Only bacteria can oxidize ammonia into nitrite.

There are other soil creatures with which we are more familiar. Moles and earthworms, burrowing crickets and insect larvae all tunnel through the soil, moving vast amounts of dirt, rearranging it, compacting it here and opening up air and water passages there. Their digging continually changes the habitat for microbes. One day there may be billions of one kind of bacteria, and the next day they may be replaced by an entirely different species. Waterlogging may choke out those which depend on air and favor those which thrive without it. There may be thousands of species lying dormant, waiting for the right conditions. Thus, an activity like plowing can cause the number of organisms to proliferate thirtyfold in a few days.

Continued on next page

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Soil - The Miracle We Take for Granted

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There is an enormous commerce in chemicals going on in the ground. Microbes and fungi make nutrients available to plants. Some also attack plants and cause them to wilt and die. Some use up essential minerals and thus retard plant growth. Other microbes boost plant growth by liberating more nitrogen or phosphorus or potassium. And there are bacteria which provide plants with growth hormones.

Soil microbes also dispose of sewage and some kinds of trash. In laboratories, we see that the right sequence of bacteria can break down oil. And studies in the field have shown that some soil microbes can consume up to 99 percent of the DDT sprayed on them within a few weeks. But it doesn't always work. Other soil microbes will refuse to "digest" a pesticide as adamantly as a child may refuse to eat spinach. And too often toxic chemicals get into groundwater before any bacteria can get to them.

Healthy soil has millions of possibilities: decomposers, benefactors, curatives, tiny chemical factories. But so complex and minute is the life of soil, and so remote are its inhabitants from our eyes, that we do not think of it as a living world. Rather, we think of it as a manufactured commodity. Plow it right, water it right, add a little nitrogen here and a little phosphorus there, and, we think, things will grow.

Unfortunately, we are finding out that it doesn't always work that way. Much of our technology turns out to be

bad for soil. When we take away the vegetative cover by using a plow, we leave the soil open to the forces of wind and rain.

We are now losing topsoil at a rate of about six billion tons a year in the United States, and more worldwide. The causes are varied. Too many farmers plow up and down hillsides, leaving furrows that turn into gullies when it rains. Too many speculators are plowing up dry lands or steep lands that should not be farmed. Too many farmers are abandoning traditional crop rotations that once rebuilt overworked soils. Too many developers are careless with bulldozers.

The consequences of such actions could be enormous in the years ahead. Ours is already a hungry world. If, as the experts believe, one-third of the Earth's cropland is eroding faster than nature can replace the soil, we are losing productivity. We may cultivate the same number of acres, but as the soil gets thinner, we will harvest less food from it. And we will see more streams silting, more fish species vanishing, more sediment filling our lakes.

If we are to turn things around, we are going to have to make some choices. And to make these choices, we will have to understand that soil is not a commodity but a habitat. And we are going to have to conserve it much the way we go about conserving other habitats - by thinking of it as part of the immense and complex variety of life.

Credit: National Wildlife, Feb.-Mar. 1985

GCSAA elects their 1993-94 Board of Directors

Randy Nichols, CGCS, Cherokee Town & Country Club, Dunwoody, Georgia, was elected president of the Golf Course Superintendents Association of America (GCSAA) during the association's recent annual meeting in Anaheim, California.

Nichols succeeds William R. Roberts, CGCS, Lochmoor Club, Grosse Pointe Woods, Michigan, who as immediate past president will continue to serve on the board for the next year.

Joseph G. Baidy, CGCS, Acacia Country Club, Lyndhurst, Ohio, was elected vice president.

Re-elected as a director and appointed secretary/treasurer was Gary T. Grigg, CGCS, Naples National Golf Club, Naples, Florida.

Elected as directors were David W. Fearis, CGCS, Blue Hills Country Club, Kansas City, Missouri and George E. Renault III, CGCS, Burning Tree Club, Bethesda, Maryland.

Appointed to the board was R. Scott Woodhead, CGCS, Valley View Golf Club, Bozeman, Montana. Woodhead will serve the remaining year on Baidy's term as director. Baidy's director position was vacated when he was elected vice president.

Paul S. McGinnis, CGCS, Union Hills Country Club, Sun City, Arizona, and Bruce R. Williams, CGCS, Bob O'Link Golf Club, Highland Park, Illinois, have one year remaining on their terms and will continue serving as directors.

GCSAA officers serve one year terms, and directors are elected to two year terms.

The title "CGCS," which follows each directors name, stands for Certified Golf Course Superintendent. The CGCS title recognizes the achievement of high standards of professionalism through education and experience.

Credit: GCSAA News Release, Feb. 18, 1993

Environmental Issues and Golf

Golf has increasingly been under the microscope, both in the daily management of our courses and in the construction of new facilities or the renovation of existing ones. Many groups oppose new golf courses vehemently – their position is that one more course anywhere is a bad idea. For example, construction of the Homestead Golf Course in Northern Michigan was an acrimonious confrontation. Paying more attention to the environment as golf is managed without a doubt will make golf more expensive.

What makes the environmental debate so crucial is the wide variety of issues. In a short newsletter we cannot cover them in any detail, but just consider the following list:

1. WATER – pollution of groundwater and surface water is closely watched. Many question how chemicals applied to our courses could affect streams with runoff or groundwater through leaching. The primary water concerns are use of pesticides and other potential contaminants like gasoline, fertilizers, erosion, and thermal pollution.

Both university and governmental research indicate that golf courses do not contribute significantly to groundwater contamination. Many courses filter their water so the water returned to the ground and streams is often in better condition environmentally than when it leaves the tap.

The second water issue is irrigation use. This is especially true in desert areas, where water is scarce. However, some locales in the Northeast and Midwest face limitations as

well. Several courses in New Jersey have been limited to watering tees and greens in recent summers.

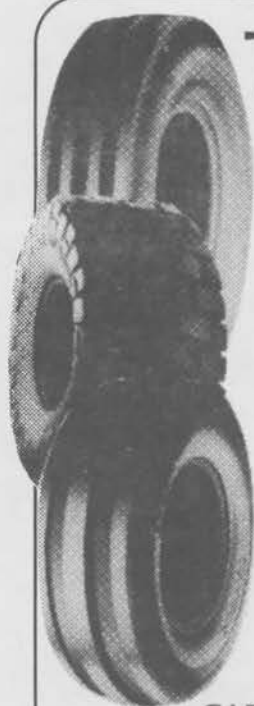
The bottom line is that golf must use less water. USGA Green Section research indicates in many cases that more than 50% savings of water can be achieved through better irrigation systems and more sensible water management. Many golf facilities throughout the country have already reduced their irrigation significantly, and the golf industry has received the message.

2. CHEMICALS – in addition to runoff into water supplies, which is only the beginning, many chemical issues abound. How far do these chemicals move? How long do they last? How do they affect vegetation besides turf, like trees and shrubs? What are the health and safety issues? "Right to know" laws, which require posting of which chemicals have been applied to golf courses, are now very commonplace.

Golf course superintendents have fewer chemicals available to them than in previous years for two reasons – several have been taken off the market due to regulations, and new products have been curtailed because of rising development costs.

Golf course superintendents are well educated in their craft, as most possess university degrees in agronomy, horticulture, or related fields. Most golf courses have at least one person certified by the state for chemical handling and

Continued on next page



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Environmental Issues and Golf. . .

Continued from previous page

application. Another safeguard to chemical applications is their expense. Not using them saves a lot of money! Besides that, nowhere near the average acreage of a golf course – 140 or so – receives any chemical applications at all.

3. WATER EFFECTS ON PEOPLE AND WILDLIFE – certain pesticides have resulted in bird-kills and fish-kills, but other possible ramifications for animals include behavior, physiology, reproduction and overall health.

After LPGA player Heather Farr and LPGA Tournament Director Suzanne Jackson were diagnosed with breast cancer, several LPGA players indicated their overall concern about golf course chemicals and a possible connection to these incidents. A handful of case along these lines have surfaced.

Overall research on these issues is inconclusive, but the emotions run very high.

4. LOSS OF "NATURAL" AREAS – many believe golf course construction results in the loss of natural lands, habitat for important wildlife, plant species and other organisms. In Northern Michigan, this concern is compounded by construction near wetlands, forests, and other environmentally sensitive areas. However, once construction is finalized, many courses serve as wildlife sanctuaries, particularly in metropolitan and suburban areas. Canadian geese have arrived at our courses in Michigan, and it is not unusual to see deer on golf courses, even in the Detroit area.

Among the steps taken are that the USGA has provided a grant to the Audobon Society of New York State – for the Audobon Cooperative Sanctuary Program for golf courses

(ACST), which provides advice for the development of habitats on courses for wildlife. At this point, nearly 500 courses around the country, with 24 in Michigan, are participating.

How is the golf community reacting to all these issues? On a national level the USGA Green Section has committed \$3,200,000 to environmental research projects at universities throughout the country, including Michigan State University. The Golf Course Superintendents Association of America has been very active as well.

Overall, American golf has an excellent track record through the years in protecting the environment while developing high quality playing surfaces. Many of these issues are linked to public perception rather than reality, and the emotional climate requires golf to be more proactive and communicative regarding its environmental record.

Locally, Michigan state University has led the way in research, and funding by member clubs to the Michigan Turfgrass Foundation is vital to that effort. The four chapters of golf course superintendents – Michigan & Border Cities (Detroit area), Mid-Michigan, Northern Michigan, and Western Michigan – all have key leaders in this area. The Association holds four Green Seminars each March in cooperation with the superintendents chapters, and each superintendents group holds several seminars of their own.

The so-called "average golfer" should have a basic understanding of the fundamental issues concerning golf and the environment. We appreciate the assistance of James T. Snow, National Director, USGA Green Section, who wrote a similar article, and William R. Roberts, Immediate Past President, GCSAA.

Credit: GAMbits (News from the Golf Association of Michigan), September, 1992

NMTMA/GCSAA Seminar Slated for Winter 1994

David J. Little, CGCS

N.M.T.M.A. is proud to announce the first annual N.M.T.M.A. sponsored G.C.S.A.A. Seminar. Combining our continuing effort to provide quality information to our members and our concern for the environment as an association, we have asked the GCSAA to present: "Protection of Water Resources." The seminar is taught by Scott Harrison, Pesticide Education Coordinator at Penn State University, and Dick Parizck, Hydrogeologist at Penn State University. It will cover surface and ground water hydrology, soil geology, also water, petroleum and agricultural chemical interaction. This will be a two day seminar earning 14 C.E.U.'s, held February 23rd and 24th, 1994. More information on

location, lodging and cost will follow in future publications.

We are already working on our 1995 seminar. Following our environmental theme we are trying to schedule two one-day seminars, running back to back. The two we are trying to confirm are: "Wildlife Management and habitat conservation" and "Implementing Strategies and Plans for Turfgrass Environmental Systems".

NMTMA members are responsibly managing many beautiful Northern Michigan properties at this time. These seminars are an excellent way to pick up or brush up on pertinent information to help us continue reviewing, revising and improving our management practices.

Change of Address, Membership Application info available

Any member with a change of address should immediately contact

Thomas J. Reed at 3733 Apollo Drive, Traverse City, MI 49684.

He should also be contacted if any person would like to apply for membership in NMTMA.

Winners announced in GCSAA golf writers contest

Randy Nichols, CGCS, president of the Golf Course Superintendents Association of America (GCSAA), has announced the winners of the organization's seventh annual golf writers contest.

The article chosen by the judges for first place was "The Silent Artists," written by Jody Olson, which appeared in the September/October 1992 issue of *Fairways & Greens* (Arizona Golf Association). Olson, who is associate editor at *Golf Illustrated*, will receive an engraved recognition plaque and a cash prize of \$1,000.

Second prize of \$600 goes to Doug Saunders for his story, "Simmering in Death Valley's Mega-Heat," which appeared in the August 1992 issue of *Golf Course News*.

The third-place award of \$400 goes to Rick Remsnyder for his article, "Keeping the Game Green," which appeared in the May 1992 issue of *Suburban Golf Magazine* (Gannett Suburban Newspapers - White Plains, N.Y.).

GCSAA's awards competition recognizes the writer for journalistic talent and effectiveness in informing the public about the golf course superintendent's profession. The annual contest is open only to members of the Golf Writers Association of America (GWAA).

The winners were presented their plaques and prizes April 4th at the awards banquet during the GWAA's annual championship in Myrtle Beach, S.C..

The contest is independently judged by professors from the William Allen White School of Journalism and Mass Communications at the University of Kansas.

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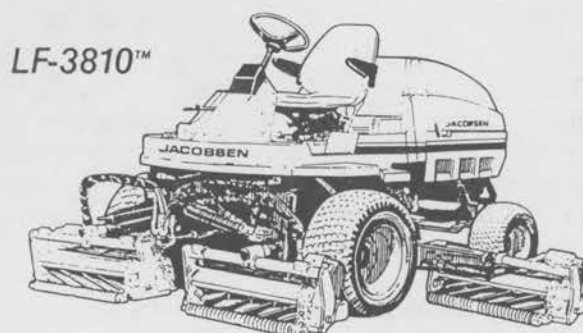
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MEMO

To: Golf Course Superintendent
From: Experienced Memo Writer
Date: Today
Re: Tips on Writing Memos

Some of you may sweat over writing memorandums. Others may find it a delight. Whatever, the more effective you can make them, the better it will be for yourself as well as the recipient of your memos.

Often, a well-written memo can be the difference in persuading someone to your viewpoint or in edging out someone for a new job.

Here are some tips:

1. Know why you're writing a memo. Write a purpose statement to yourself that tells you what you expect your readers to do or know when they finish reading your memo. Refer to your purpose statement as you write to be certain you're staying on track.

2. Quickly let your readers know the reason for your memo. Get to the point. Keeping people in suspense is for mystery novels.

3. Anticipate reactions. Chances are your memo should or will be read by anyone interested in the topic it addresses. . . or you shouldn't be writing the memo. Consider the perspectives of all the possible readers.

4. Answer the questions they may have. . . clearly. If your memo shows that you are sensitive to other's needs and interests, your credibility will be enhanced.

5. Does your memo appear to be too long? Take time to revise it. Be certain you say exactly what you want to say. Extra words dilute the strength of your message.

6. Polish your memo. Once you are comfortable with its organization, look at the memo's finer points.

7. Keep the tone of your memo natural. Read it aloud; listen to the language. Does anything sound awkward. Depending upon the readers of your memo, you may use an informal tone . . . or a more formal one.

8. Be courteous.

9. Be factual.

10. Be specific.

11. Be brief.

12. Don't write anything you wouldn't say publicly. Privacy isn't guaranteed, even if you mark a document "personal" or "confidential" (*Often, sensitive issues are best dealt with face-to-face*).

13. If you write a negative memo, wait a day before sending it. Should you reconsider, shred the memo. . . wastebaskets aren't private property.

Strong writing skills can gain you visibility and respect. If you find writing hard, get a good writing handbook. Some diligent effort can improve your spelling and grammar.

All types of writers continually seek to improve their skills. Developing your memo technique is an excellent step toward a good, clear writing style that will benefit you in many ways.

Credit: Hole Notes 8/91

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The New USGA Guidelines for Building Greens

After months of work involving experts from all over the world, the USGA Green Section has put the finishing touches on an in-depth overhaul of the "specs" for building greens. The word "specs" is in quotes since we offer this method of green construction as just that - a method. While we certainly feel it is the most scientific and proven method, we constantly remind folks that we offer these construction guidelines as a service to the industry, not as a mandate. The USGA does not make a dime from people choosing this method. One of the key aspects of the USGA Green Section's mission is to promote better playing conditions within the bounds of proven agronomic principles. These new guidelines for building greens are 100% consistent with that goal.

There are a couple of points you should keep in mind when you review the new guidelines.

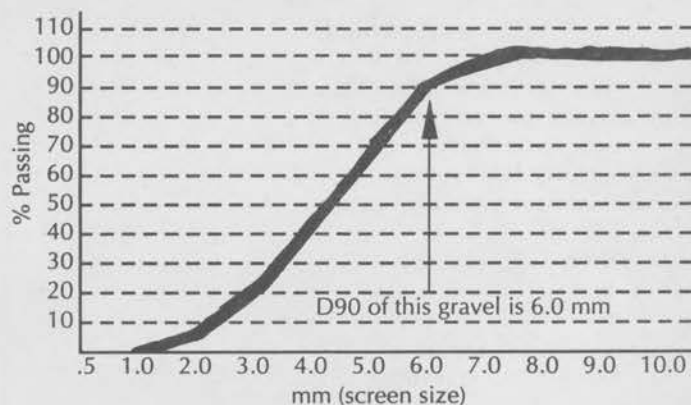
The intermediate sand layer will still be required in many greens projects. The parameters for the gravel and root zone mix are very "tight" when the intermediate layer is not to be used. If you are lucky enough to be in an area where such ideally sized materials can be found, you can leave the layer out. However, most areas are not so fortunate to have perfectly matched gravel and root zone sands. The intermediate layer will still be necessary in these cases.

Next, to properly evaluate the compatibility of the root zone to the gravel, the "D" factors of both materials must be determined. The "D" number of a sand or gravel refers to the percentage of particles (by weight) less than a specified diameter. For example, if the D90 of a gravel is 6.0 mm, this means that 90 percent of the gravel is smaller in diameter than 6.0 mm and

10 percent is larger. The key here is that you cannot determine whether or not the intermediate layer is necessary without evaluating the "D" factors of the gravel and root zone sand. Since this work is best done by a professional, physical soil testing lab that is using appropriate lab procedures, it is more important than ever before to submit your materials to the lab well prior to construction.

Finally, when you are considering a green(s) construction project, pick up the phone and call your local Green Section office. The agronomic staff of the USGA is anxious to help make your project a complete success - regardless of how you choose to build your greens.

Credit: USGA Green Section Mid-Continent News, March 1, 1993



Bunker sand testing finds critical answers to life of traps

At one time, any white sand was thought to suffice for bunker use because "sand is sand" and the bunkers needed only to look nice. But not all sands are created equal.

Sands containing too much silt and clay form crusts or set up into a massive structure. Either of these conditions lowers playability and requires additional maintenance.

When excessively large particles are blasted onto the green they interfere with putting and dull mower blades. The shape of the individual particles also makes a big difference in sand behavior. Round sands are not stable on slopes and are more easily displaced by balls. The partial burial of balls in round sands has earned the name "fried egg lies."

So, it is clear the selection of a bunker sand - commonly taken for granted - should not be left to chance.

The first procedures for evaluating sands for use in bunkers were developed by K.W. Brown and J.C. Thomas (myself) and published in 1986.

By correlating the results of a battery of tests run on bunker sands with the results of a survey of the golf course superintendents who submitted the bunker sand samples, we established a set of criteria common to bunker sands that superintendents judged to be of high quality.

While it may not be possible to find a local sand that meets all criteria, by testing those available you can choose the sand that has the greatest potential to provide acceptable playing conditions and best use construction funds.

Criteria that need to be evaluated include particle size and shape, crusting, the propensity to set-up into a massive structure, infiltration rate, color, and the tendency to form fried egg lies.

PARTICLES

Particle-size analysis gives a measure of the amount of silt and clay present in the sand as well as a measure of the size

of the sand particles. An ideal bunker sand should contain less than three percent total silt plus clay. Sands exceeding this amount of clay are subject to forming surface crusts and are more likely to set-up.

Crusting is the formation of a thin hardened surface layer. Crusts on bunker sand usually form as a result of rain or irrigation water, which causes the silt and clay particles at the surface basically to cement the sand particles together.

Set-up is a similar phenomenon. However, in this case, the cementation occurs throughout the sand and not just at the surface. This results in a sand that is lumpy when disturbed after rainfall or irrigation.

Both crusting and set-up require more frequent raking to maintain adequate playing conditions. The particle size distribution of the sand particles should be such that the majority of the particles are from 0.25 to 1.0 millimeter in diameter, with less than three percent of the particles greater than 2.0 mm in diameter and less than 25 percent of the particles less than 0.25 mm in diameter.

Angular-shaped sand particles are preferred over round particles, because the angular particles require a greater force to displace them when hit by a ball. This leads to generally higher resistance to developing fried egg lies and less blasting of the bunker sand onto the green, where it may interfere with putting and mowing. In addition, angular sand tends to stay in place better on slopes.

Whatever sand is selected, it should be underdrained and must have an infiltration rate as great or greater than that of the root-zone mix on the adjacent putting green. An insufficient infiltration rate may result in bunkers that pond water and remain excessively wet.

continued on next page

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Bunker sand testing. . .

continued from previous page

COLOR

Sand color is determined by comparison to the Munsell color chart. In general, most courses and players prefer a white or light-colored sand. However, when the choice is between a white sand with poor playing characteristics and a darker sand with good playing characteristics, the darker sand may perform better in the long run.

BAD LIES

Probably the most frequent criticism of bunker sands is the tendency to form fried egg lies. Such lies make it difficult for the player to recover and require that the player dig the club into the sand and blast the ball and adjacent sand out of the bunker and onto the green. The fried egg lie development test evaluates this by measuring the force required to press a golf ball to a specified depth in a known volume of sand. Sands that score high on the fried egg lie development test are resistant to forming fried egg lies.

Whether renovating existing bunkers or adding new bunkers, testing of the possible bunker sands assures getting the best playing conditions per dollar invested in materials. Given an adequate amount of effort and proper testing, bunker sands can be found which require a minimum of maintenance and provide ideal playing conditions for those who are unfortunate enough to have their ball land in them. Several soil testing labs around the country test bunker sand.

James C. Thomas is a professional agronomist and turf services director at K.W. Brown & Associates in College Station, Texas.

Credit: Golf Course News, February, 1992

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10 Tips for Laundering Pesticide Soiled Clothing

Ann C. Slocum, Lois C. Shem and Larry G. Olsen, Michigan State University

Proper handling and washing of pesticide contaminated clothing is important to protect you and your family's health. The following guidelines can help you properly clean pesticide contaminated clothing and protect other clothing from pesticides, too.

1. Store and wash pesticide soiled clothing separately from other family laundry. While laundering, the pesticide removed from soiled clothing is deposited on other clothes in the wash.

2. Prerinse clothing before washing. Prerinsing helps remove a large amount of pesticide, especially if it is a wettable powder. Prerinsing can be done by hosing off clothing outdoors, rinsing in a container or in the washing machine.

3. Wash pesticide soiled clothing in hot water. Water 140 degrees or higher removes more pesticide than other wash temperatures.

4. Use a full tub of water and regular wash cycle. Water should circulate freely to remove as much of the pesticide as possible.

5. Use a heavy duty liquid detergent. Heavy duty liquid detergents are better at removing problem pesticides. They are especially helpful in removing oil-based pesticides. Use the amount of detergent recommended on the bottle. Neither bleach nor ammonia seem to affect pesticide removal (NEVER mix these two products together).

6. Wash the clothing 2-3 times. Repeated washing is necessary if the pesticide used is highly toxic or if large areas of the garment are soaked.

7. Line dry whenever possible. Exposure to sunlight may help break down pesticides.

8. Clean the laundry equipment. Run an empty load using hot water and detergent. Wipe the inside of the dryer with a damp cloth.

9. Launder clothing after each day's wear. When clothing is repeatedly soiled before it is laundered, more pesticide remains in the clothing after washing, and there are higher concentrations of chemicals in the rinse water.

10. Discard clothing that is heavily contaminated with a highly toxic pesticide. However, clothing soiled by low toxicity pesticides can be laundered safely and effectively even if large areas are heavily soiled. In general, as the concentration of the active ingredient in the pesticide increases, the removal of pesticide residue by laundering decreases.

More Tips

Remember that pesticides can be absorbed through the skin. . . SO

- Wear rubber gloves to handle pesticide soiled clothing.
- Make a disposable hamper for pesticide soiled clothing. Line a cardboard box with a garbage bag to use ONLY for pesticide soiled clothing.
- Dispose of the gloves and the disposable hamper at the end of the pesticide season in the same way as you do the pesticide containers.
- Following the laundry recommendations will help reduce exposure to pesticides.
- Minimize exposure to pesticides. Encourage everyone who handles pesticides to practice good safety and personal hygiene habits. Be sure to wash hands before eating, smoking, or going to the bathroom.

Research related to pesticides and clothing is currently being conducted in several states. Recommendations presented in this article have been drawn from these investigations.

If you have further questions, contact:

Dr. Ann C. Slocum

Department of Human Environment and Design
College of Human Ecology
Michigan State University
East Lansing, MI 48824

'93 Mechanic's Meetings

The Northern Michigan Turf Managers Association will be holding three special meetings for mechanics (superintendents are welcome too).

Below is a list of proposed dates, locations and topics. Please mark these on your calendar.

1993 Mechanic's Meetings

May 12th at McGuire's in Cadillac:
Bearing Maintenance - Timken Bower

July: Date and topic to be announced

September 14th at Garland:
Washwater Recycling.

Watch *Turf Times* updates for more details.
If you are interested in hosting a meeting this year or next, please call Dan Stratton at (616) 352-4241.

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Simple Ground Squirrel Control

In past years, the Cadillac C.C. had a severe ground squirrel problem. The little buggers were everywhere, causing damage to all aspects of the course. Multiple commercial controls we tried, including traps and poison. They all had only superficial effects.

Then James Gautz, our Assistant Superintendent, came up with an idea that over time has reduced our rodent population to easily manageable levels. Jim built a wire mesh tube about 3" by 9" long and capped at one end. When employees had extra time they would take the tube and a jug of water out onto the course. When they spied a ground squirrel they would chase it down its hole. Next, they would place the tube over the hole and pour water through the tube into the hole. The squirrel would run up into the tube where it could be easily captured and disposed of. Often several squirrels would come out of a single hole. In the beginning large numbers (up to 75) of pests were taken in a single afternoon. Over a period of several years the rodent populations were greatly reduced. Now, three or four afternoons a summer on "gopher patrol" manages their populations.

Jeffrey T. Dorrell, Superintendent, Cadillac C.C.



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Controlling Borers on White Birch Trees

Roscoe Randall, Extension Entomologist, Univ. of Illinois

Borers have destroyed many beautiful white birch trees. The bronze birch borer is a common insect pest across the midwest. Early symptoms of borer activity include yellowing of trees at the top of the tree, then die back at the top and eventually the entire tree may die. Eggs are laid in bark crevices by a slender, 3/8" long, bronze beetle in May of each year. Eggs hatch and the legless, white, flattened grub tunnels beneath the thin bark. The tunneling about under the bark loosens it and also girdles the limb or trunk being fed upon.

Control alternatives include planting birch species not commonly attacked by the bronze birch borer. These include river birch, a bronze bark birch, or a white bark species called Whitespire, which appears to be resistant to borers. Fertilizing and watering to prevent drought stress appear to reduce borer activity, but birches grown in the open are under stress in mid-summer.

Insecticide application is another alternative. Since 1970, entomologists at the University of Illinois have suggested the use of Cygon 2E as a spray applied in late May or early June and repeated three weeks later. This year we also suggest Dursban as an alternative insecticide spray.

Another technique which has been tried and evaluated since 1977 is the use of Cygon 2E applied as a band or collar on the trunks of white birch in late May or early June. The results for the past seven years have been favorable. The method is to simply apply Cygon 2E as a concentrate out of the original container in a 5 or 6 inch band around the trunk below the lower limbs. Apply it with a paint brush or, if there are many trees to treat, with a small, low pressure sprayer. As with spraying a dilute spray, apply on a dry day when the concentrate will dry rapidly. It will be translocated into the tree and will kill hatching borers.

Cygon will leave a slight yellow stain on the trunk but will disappear before fall. Do not come in contact with the Cygon concentrate while applying it. Do not apply a band wider than six inches. Banding is not an improved method over spraying the birch tree but is easier and can be used where spraying would be difficult. Neither spraying nor banding will save a severely borer-damaged birch tree. Also, do not band non-birch trees suspected of being infested with borers as Cygon may injure or kill other trees.

Credit: Hole Notes

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1993 Calendar of Events

Dates Subject to Change
(* - NMTMA Dates to note)

DATE	EVENT	LOCATION
APRIL		
19	M.B.C.G.C.S.A./Canadian G.C.S.A. Meeting	Detroit G.C.
19	W.M.G.C.S.A. Meeting	Grand Haven G.C.
MAY		
17	*N.M.T.M.A. Meeting	Elmbrook G.C.
18	W.M.G.C.S.A./N.M.T.M.A. Meeting	PohlCat G.C.
21	M.B.C.G.C.S.A. SPECIAL OLYMPICS FUND RAISER	Bald Mountain G.C.
JUNE		
3-6	LPGA OLDSMOBILE CLASSIC	Walnut Hills C.C.
7-8	State Pro-am	Boyne Highlands
14	M.B.C.G.C.S.A. Meeting	Bloomfield Hills
17-20	U.S. Open	Baltusrol G.C.
19	WORLD CUP SOCCER GAME	Pontiac Silverdome
21	*N.M.T.M.A. MTF FUND RAISER	Elk Ridge G.C.
21-27	FORD SENIOR PLAYERS TOURNAMENT	TPC of Michigan
25-29	TOURNAMENT OF CHAMPIONS	Boyne Mountain
28-1	MICHIGAN OPEN	Grand Traverse
JULY		
5-11	U.S. SENIOR OPEN	Cherry Hills C.C.
6	*N.M.T.M.A. Meeting	McGuire's
8	M.B.C.G.C.S.A. Meeting	Dunham Hills G.C.
19-25	SENIOR PGA FIRST OF AMERICA CLASSIC	The Highlands
22-25	U.S. WOMEN'S OPEN	Crooked Stick G.C.
AUGUST		
5-8	BUICK OPEN	Warwick Hills C.C.
12-15	PGA CHAMPIONSHIP	Inverness Club
17	WISCONSIN TURFGRASS FIELD DAY	R&E Facility, Madison, WI
19	M.T.F. TURFGRASS FIELD DAY	Hancock Center, MSU
26	*N.M.T.M.A. Meeting	Gaylord C.C.
22-25	MICHIGAN PGA CHAMPIONSHIP	Garland
28-29	MICHIGAN PGA SHOW-DOWN	Garland
28-1	UPS GREAT LAKES OPEN	Boyne Highlands
SEPTEMBER		
13	W.M.G.C.S.A. / MTF FUNDRAISER	Egypt Valley C.C.
16	MICHIGAN SUPERINTENDENT'S CHAMPIONSHIP	The Fortress
20	*N.M.T.M.A. FUNDRAISER	Little Traverse Bay
28	W.M.G.C.S.A. ANNUAL MEETING	Thornapple Creek
OCTOBER		
4	*N.M.T.M.A. ANNUAL MEETING / Tuck Tate Classic	Walloon Lake C.C.
4	M.B.C.G.C.S.A. / MTF FUNDRAISER	Franklin Hills C.C.
		Katke-Cousins C.C.
		Grosse Isle C.C.
		Oakland Hills C.C.
14	G.C.S.A.A. seminar "Micro-Biology of Turfgrass Soils"	Holiday Inn - East Lansing
NOVEMBER		
6	W.M.G.C.S.A. FALL DINNER PARTY	C.C. of Jackson
16-18	G.C.S.A.A. Executive Training Seminar - <i>Developing and Maintaining Effective Employee/Management</i>	Holiday Inn - East Lansing
DECEMBER		
4	*N.M.T.M.A. / M.M.T.M.A. CHRISTMAS PARTY	Garland
JANUARY 1994		
3-5	WISCONSIN TURFGRASS & GREEN INDUSTRY EXPO	Holiday Inn W., Madison, WI
18-20	MTF 64th ANNUAL TURFGRASS CONFERENCE	Holiday Inn South
FEBRUARY 1994		
1-2	G.C.S.A.A. GOLF CHAMPIONSHIP	Austin Texas
3-7	G.C.S.A.A. ANNUAL CONFERENCE & SHOW	Dallas Texas
23-24	G.C.S.A.A. SEMINAR	Treetops

