OCTOBER, 1994
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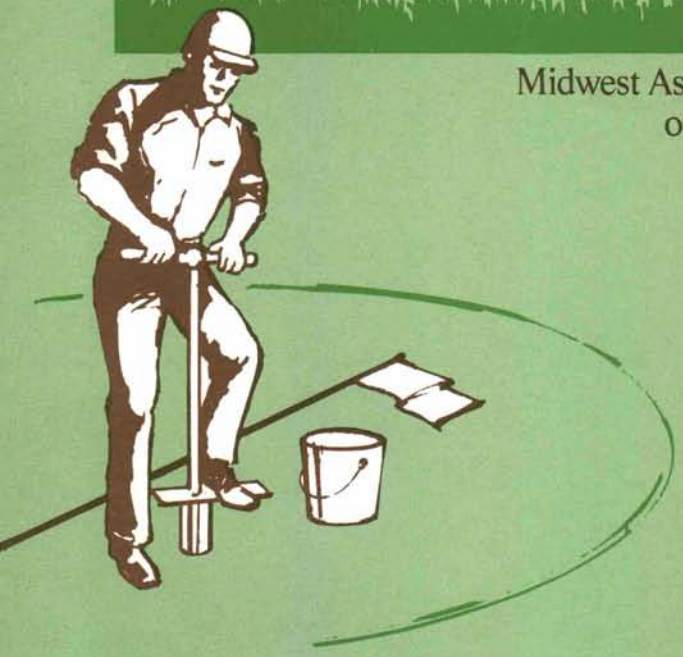
the Bull Sheet

Midwest Association of Golf Course Superintendents
of The Greater Chicago Metropolitan Area



ARTICLES

NEXT MEETING

October 10, 1994

Oak Brook Hills Resort

Host Superintendent: Kerry Blatteau

You Just Can't Beat THE SYSTEM.

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CUTTING UNIT ADVANTAGES:

- *Two cutting unit options allow you to match the right cutting unit to your turf. The standard 5-inch, 7-blade cutting unit is designed for delicate grasses—while the heavy-duty 7-inch, 8-blade ESP unit is perfect for tougher conditions.*
- *Moving the cutting-unit mounting point behind center puts balanced force over both rollers improving quality of cut by keeping their cutting units more level during operation.*
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- *Onboard backlapping is standard on both the 3215 and 3235. Simply pull out a knob to reverse oil flow and "dial-in" the desired reel speed. The same system allows you to set reel speeds for actual mowing conditions as well.*

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The 3215 with standard cutting units is a 25.5-hp machine designed to perform well on any turf type, but especially on the more delicate cool-season grasses. Cutting units are 5 inches in diameter and feature 7-bladed reels.

The 32-hp 3235 can be equipped with standard or heavy-duty ESP cutting units. The ESP units are 7 inches in diameter, have 3-inch rollers, and feature 8-bladed reels.

Their wider mouth, extra weight, and higher-capacity hydraulic motors allow them to work well where lightweights never have before— long grass, wet conditions, tough warm-season grasses, and scalping for overseeding operations.

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the Bull Sheet

Official publication of the MIDWEST ASSOCIATION OF GOLF COURSE SUPERINTENDENTS.

1994 Board of Directors

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The **Bull Sheet** is published once a month. All articles are required by the 10th of the month to make the next issue. Advertising is sold by the column inch, by the quarter page, half page and by the full page. All artwork to be finished, camera ready or negative, screen 110 or 133, black and white only. Circulation is over 500 issues per month.

On Course With the President

Rapidly, it is becoming the time when we need to be looking inward to ourselves as members of an association with the impact and size of the "Midwest". As turfgrass associations go, we are huge. Huge! I am told by the fine GCSAA staff personnel in Lawrence, KS that we, the members of the Midwest, can basically pride ourselves as the largest free standing singular chapter in the association. Six hundred some-odd regional members and a GCSAA voting strength of over 300 does not comprise a small group, no matter the discipline. We are, as an association, a fine and diverse group of turfgrass professionals choosing to congregate under the banner of the MAGCS. We do a fine job of representing ourselves as turfgrass professionals and membership in our association provides a comfortable sense of belonging and purpose that surely must be fulfilling. Or is it? I'm not so sure ...

The members of the Midwest, can basically pride ourselves as the largest free standing singular chapter in the association.

We do a terrific job of providing for ourselves. The quality of the MAGCS monthly meetings, golf events, educational presentations, and social functions are unquestionably top rank. The people of the association simply could not be any better. We can count our membership the finest group of commercial and corporate members anywhere and they unfailingly support the Midwest. The individual MAGCS members are staunch supporters of the association and essentially provide the fine nucleus from which we gain our strength. The greatest asset of our own "Midwest" association is the individual and collective strength of it's membership.

But what do we as an association accomplish? Plainly, if sheer numbers are a valid indicator, there must be something of quality and desirability at the present Midwest association level. But I fear it tends to be focused selfishly inward and serving only of ourselves. The question arises about the defined purpose or mission of the Midwest. Indeed, why **is it** we are here? Is it simply for the business of putting on a few

But what do we as an association accomplish?

summer golf extravaganzas and a few more educational offerings? Or can there be more? Realistically, how well do we support the area of turfgrass research or even the CDGA turfgrass advisor? Oh, we dribble a small contribution to the ITF, and we barely seem to be able to find some token dollars for GCSAA or USGA sponsored turfgrass research projects. Since Dr. Randy Kane has been in the area, only in the recent past has the MAGCS seen fit to contribute to his needs or even to insure that he is sufficiently funded to remain in this area. There are other examples (the CDGA/U.I. experimental green at Cantigny, for instance) and endless other possibilities for MAGCS directed research funding. There are also

(continued page 4)

(On Course With the President continued)

the very real possibilities and needs for Chicago area charities to be recipients of MAGCS contributions. Not to mention the salient benefits of some very positive public relations for the golf course superintendent and the golf industry. The need and the desire for MAGCS sponsored contributory funding is there and we as an association must explore how we can become a driving force in that type of funding. Yes, the P.R. angle may be ultimately self-serving and motivated to our own benefit, but this notion that we exist simply and essentially to best serve ourselves is decidedly not positive "spin" for anyone. It may well boil down to defining the very essence of why we do in fact exist.

Clearly it is time the Midwest Association of Golf Course Superintendents begins to define its contributory role and become a dominant force in the arena of association sponsored and funded beneficiaries. Be it support of turfgrass science and research or perhaps contributions for an association sponsored charitable group, the time is now. Sadly there are far less accomplished chapters doing far more than we in this critical area. We have lagged behind too long and there is no defense in dragging our feet any longer.

ATF

He's At It Again

by Fred Opperman, Editor

Once again, on September 1, 1994, on his noon program, Paul Harvey stated that the golf courses were killing wildlife in their quest to keep the grass green. He inferred that due to the heavy pressure from the golfers to keep everything green that the superintendents were over-applying chemicals; and in turn these chemicals are killing off the birds and other wildlife.

Numerous associations, individual golf course superintendents, and educated others have written to Mr. Harvey explaining the factual findings of many studies and reports. These letters and reports have fallen on deaf ears. To my knowledge Mr. Harvey has never responded to any of these letters. He continues to sensationalize through his radio broadcasts these came falsehoods.

I think we may be writing to the wrong person when we address our letters to Mr. Harvey. We may get a better response by addressing our letters that substantiate the truth of the matter to the companies that he is endorsing. I once felt that Paul Harvey was gospel. I felt that the products he was endorsing must be good. Truthfully, I am now suspect of what he is pitching. He is just after the buck.

If Paul Harvey isn't factual and not researching the truth of what he is reporting, how can we believe in the products that he is selling? We need to get a campaign going to write to the car company, the saw manufacturer, the vacuum cleaner company, and the many other companies, plus WGN radio and state our case. I'm sure they would like to hear that a large segment of their consumers believe their ace pitch-man is spreading falsehoods.

If Paul Harvey is after the buck, maybe we can have some affect on the buck that he receives from the companies that he endorses. Maybe ...

Keeping Reels Sharp

by Monty Montague
National Mower & Turfco, Inc.

Reel mowers are high-precision machines that provide top-quality cutting. To deliver such cutting performance, they employ a combination of a reel, often spinning between 600 and 2,000 rpm., and a bedknife.

Because those two elements combine to do the cutting, they should be adjusted precisely. There should be little or no contact between the reel and the bedknife, and the leading edges of both should be squared off — some manufacturers even believe there should be a "reverse angle," and those vary from five to 15 degrees.

There are several ways to sharpen reels. The most commonly used is backlapping, which is actually a simple, inexpensive honing procedure that should be done after approximately 40 hours of cutting. Backlapping involves spinning the reels in reverse after applying (brushing) a special compound, and either backing the reel down to the bedknife or the bedknife to the reel, depending on the particular mower. The pressure between the reel and bedknife, combined with the sharpening compound acting as "liquid sandpaper" actually sharpens the reel blades. When the "grinding sound" stops, the backlapping process is usually complete.

Sharpening compounds come in a number of grits, from a very coarse 50 grit to a very fine 220 grit. Most people tend to use them in the 80 to 120 grit range.

There are two basic ways of spinning reels backward for backlapping. For reel mowers that are not hydraulically driven, there are electric backlappers. They cost about $400 and can be hooked directly to the mower. Hydraulically driven reels, on the other hand, will probably have a backlapping switch on them.

Sometimes backlapping isn't enough. The next step is grinding and there are several ways to grind mower reels. The first is a spin grinder. Spin grinders range in cost from $2,600 to $20,000, so many sports turf managers will actually send their reels out for grinding. But whether you send your reels out for grinding or do it in house, the most important thing you do *before* is to check the reel for bearing wear and adjust end play. A worn reel, particularly an unevenly worn reel, could be the sign of an improper adjustment or even a worn bearing that needs replacement. If that same reel was sent out for grinding without the mechanical problem being corrected first, the reel and bedknife could "slap" during grinding and create a damaged or an unevenly sharpened reel. Solve any and all mechanical problems with your reels before you send them out for grinding — check your owner's manual for specific adjustment instructions.

Spin grinding is "flat-edged" grinding and is good until you have no relief left on your reel blade. Relief grinding creates an angle on the trailing edge of your blade. All blades come from their manufacturers with relief, and it reduces the pulling and tearing of grass when reels get dull. Relief also speeds up the backlapping of resharpening process. Some manufacturers believe it extends the life of the bedknife.

One of the most common tests for reel sharpness after backlapping, grinding, or relief grinding involves placing two pieces of newspaper between the reel and bedknife. If they cut the

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(Keeping the Reels Sharp continued)
first piece of paper and bend the second, then the mower is probably ready for action. It's important to repeat this test, not just in the center of the mower but at both ends. Improper adjustment or a worn bearing can lead to uneven sharpening and leave you with a conical reel.

How often you backlap, grind or relief your reels will, in large part, be determined by your specific situation. Factors include grass type, cutting frequency and height, topdressing frequency, obstacles and more — it all depends on use. If your reel mower is still cutting beautifully at the end of the season, there's not sense in grinding it. Again, the most crucial thing is to consistently check bearing wear or end play wear, and correct it immediately. If you make adjustments and still get end play, it's probably time to change the bearing — before you use *any* reel sharpening method.
Credit: **Hole Notes, 7/94**

Super-N-Site

by Tony Rzadzki, C.G.C.S.
Superintendent, Cantigny Golf

Our final MAGCS golf event meeting will be held October 10th at the resort at Oakbrook Hills. This event will be a two man scramble and Kerry promises to set the course to play **hard**! I said, "Kerry, what if Braunsky and Ray Schei are partners ... we'll be handing out prizes at midnight!" Kerry quickly calmed me down and explained that the Nugent designed, nine year old course was designed to 'play easy'. The owners, the Dial Soap company, wanted a resort community that was eye appealing, fun to play, and not overly difficult. Par at Oakbrook is 70 and plays to 6400 yards at the tips. Kerry told me that there is no water on the right on any holes, but plenty of landscape beds. So Eddie, you'll probably break a 'hundo' but bring along some mums to transplant later.

Kerry has a B.A. in Education from Illinois State and an Associates Degree in Turfgrass Management from Danville Community College. Kerry is also involved in politics, as you all know the man behind the scenes on the board of the MAGCS. Kerry's active interest in the Midwest Association has helped us progress and grow to some 600 members. Kerry's other interests include weekend softball, golf, and is a self-proclaimed, bonafide sports nut.

Oakbrook has invested some money this year ($500K) in landscaping, cartpaths, and brick curbing at tees and greens. I'm sure that we will see some neat landscaping, play some fun golf, and enjoy a nice fall day. Don't worry, Kerry, I'll tell Eddie to bring some replacement bricks for your curbs too.

Proper Pesticide Storage

by Cooperative Extension Service

With winter approaching, we need to remind ourselves of a few basic principles about proper pesticide storage.

Regardless of the size of your operation or the volume of materials you use, pesticides should be stored in a separate building, room, or enclosure. The storage area should be kept dry, reasonably cool, and out of direct sunlight. An exhaust fan should be used for proper ventilation to help reduce the temperature and build up of toxic fumes. Be sure to locate the exhaust fan where it will not damage plants or harm humans. Some pesticides have special storage requirements and require protection against freezing or extreme heat. As a general rule, most pesticides will begin to deteriorate at temperatures below 40°F. and above 90°F. Be sure to read the label for proper storage requirements. Pesticide bags, cartons and boxes should be stored off the floor on shelves or on pallets to avoid moisture and deterioration of the packaging. The storage area should be securely locked when not in use and warning signs with **"Danger — Pesticides, Keep Out"** should be posted on the door and other appropriate areas. Be sure not to store glass and metal pesticide containers near a heat source such as steam pipes or in direct sunlight. Heating of the container may result in expansion of the liquid contents and lead to an explosion. If you are using several different types of pesticides (i.e., insecticides, herbicides, and fungicides), be sure to keep each pesticide type in separate areas to avoid confusion and inadvertent misuse. Keep a current inventory of your materials as to purchase date, quantity, and condition of the container, and use up pesticides that may be reaching the limits of their shelf life storage. By doing this, you will reduce the volume of unused chemicals preventing a large disposal problem and avoid the mistake of spraying with a pesticide that has lost its pest controlling ability. **Under no circumstances should a pesticide be stored in a food or drink container!** When examining chemicals for evidence of deterioration, look for these warning signs:

Emulsifiable Concentrates: Milky coloration does not occur with the addition of water, sludge is present or any separation of components is evident in the container.

Oil Sprays: Milky coloration does not occur with the addition of water.

Dusts, Granules and Wettable Powders: Excessive lumping.

Leaves, Limbs, Needles & Boughs

by Fred Opperman

Tree Trivia & Facts: A fully grown deciduous tree can pull one ton of water from the soil each day. Planting three trees around each American home would save 10 to 50 percent of air-conditioning bills or as much as $4 billion annually. About 2.8 billion trees are cut down in the world each year; the United States logs more than any other country — more than twice as much as Brazil.

This is a good tree for October, Acer ginnala (a'ser jin-na'la) or Amur Maple is one that colors up pretty good in the fall. It's leaf color is dark glossy green in the summer and changes to shades of yellow and red in fall. You will find the best coloration if the tree is planted in full sun.

Leaves: Opposite, simple, 1½ to 3" long, 3 lobed, with the middle lobe elongated than the two others. Light green underneath.

Buds: Small, 1/8" imbricate buds, reddish brown or lighter, glabrous.

Size: 15 to 18' and equal in spread. Most trees are multi-stemmed.

Landscape Value: Excellent small specimen to be used by the patio, screening, and massing. Very hardy and would be a good choice for an above ground container use.

Credit: "Manual of Woody Landscaping Plants" by Dirr

Golf Course Service Technician

For more than 25 years, Scotts Proturf Golf Division has sought to develop a close partnership with golf course superintendents to help them use Scotts products more effectively.

We are currently looking for an individual to apply Scotts fertilizers and pesticide products to golf course fairways, roughs, etc. in the North Chicago area. Our Technicians work closely with our customers and our Technical Representatives to plan and operate a cost efficient service schedule. A high degree of professionalism and the ability to be flexible and detail oriented is needed.

The qualified candidate will have the ability to drive a tandem axle truck pulling a trailer and state-of-the-art spreader. An Associate's degree in agronomy or turf management is preferred. Closely related practical work experience is also preferred with golf course maintenance experience required. The technician must be able to obtain the required CDL operator's license, certification to apply pesticides and be able to lift 50 pounds. Overnight travel is required.

Scotts offers an excellent salary and comprehensive benefit program including profit sharing and retirement income plans. Qualified candidates should submit a resume to: Manager, Human Resources, THE SCOTTS COMPANY, 14111 Scottslawn Road, Marysville, OH 43041. Scotts is an equal opportunity employer committed to a culturally diverse workforce.

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College Corner

Mechanic Students Wanted

by John R. Piersol
Director of Turf Management & Landscaping
Lake City Community College

In an effort to better meet the tremendous demand for properly trained turf equipment technicians, Lake City Community College is expanding the one year, college credit, certificate program in Turf Equipment Management. The school has accepted only 15 students in past years, but the goal for Fall '94 is 32 students. As of May 19, 1994, 20 students have been accepted.

Won't you please help? If anyone knows a person who is mechanically inclined and who is looking for a stable, lucrative career, have him call John R. Piersol at Lake City Community College, Lake City, Florida, (904) 752-1822, Ext. 1225 for details about the Turf Equipment Management (T.E.M.) program.

Lake City had only seven graduates from T.E.M. this Spring, and those graduates received over fifty job offers. Two of the seven students took positions starting in the $28,000-$30,000 range. Not bad for one year of training!

Penn State Now Accepting Applications - Turfgrass Management Technical Program Press Release

UNIVERSITY PARK, PA — Applications are now being accepted for Penn State's Two-Year Turfgrass Management Technical Program for the class beginning in October of 1995. There is an application fee of $35.00 and the deadline for applications is December 31, 1994. Applications can be obtained by calling (814) 865-8301 or by writing to: Turfgrass Management Technical Program, The Pennsylvania State University, 306 Ag. Administration Building, University Park, PA 16802-2601.

Penn State Competes Against Michigan State for Cutter Cup

UNIVERSITY PARK, PA — The second Cutter Cup Challenge was played last fall with Michigan State University Turf Club hosting Penn State Turf Club at Point O'Woods Golf Club in Benton Harbor, Michigan. Steve Glossinger, Point O'Woods Superintendent, had the course in excellent shape for the event.

Penn State was represented by Steve Jasimovich, Chris Modeer, Rick Pagett, and Ken Watts. Michigan State was represented by Ed Richardson, Jeff Skinner, Igancio Soto and Roger White. The match play event was tied 2 and 2, and Penn State retained the Cutter Cup for the second year. The 1994 Cutter Cup Challenge will be played in October at Laurel Valley in Ligonier, Pennsylvania and will be hosted by Mark Hollick.

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Black Layer of Putting Greens

by Dr. J. Vargas
Michigan State University

Of all golf course putting green conditions to be investigated during the past ten years, none has generated more interest or concern for curative measures than the "black layer". Dr. Joe Vargas at Michigan State University is an authority in this area and his research results and conclusions are worthy of note. Consider the following points:

• We need to know more about the practice of sand top-dressing of golf greens. Light, frequent applications should not result in the creation of a perched water table or localized dry spots that may require use of wetting agents or nematode problems.

• Natural soil supports good populations of a wide variety of organisms; often sands do not. Sand cultures allow weak pathogens to become stronger. These have been observed, particularly on Toronto creeping bentgrass. A bacterial wilt has been found to plug conductive tissue under some conditions.

• Sands may become nutrient deficient — especially for phosphorus. Calcarious sands may require use of sulfur to acidify for improved nutrient availability.

• The black layer is associated with use of sulfur, particularly dry forms. Sulfates in water wash down into the sand. The black layer has nothing to do with either soil or sand as it may occur in either substrate. It has to do with the presence of sulfur under anaerobic conditions as the root zone becomes water saturated.

• Algae use a by-product of sulfur to stimulate their development. Control of algae is helped by getting rid of sulfur.

• Sulfur becomes an oxygen sink. That is oxygen is tied up in the oxidation of sulfur. Where there is limited oxygen, anaerobic conditions develop. This condition is enhanced by excessive irrigation, heavy rains, traffic that compacts the soil and the presence of sulfur. One inch of rain can take all the oxygen out for a 24-hour period. Sulfur may ceom from supplemental application, acid rain, irrigation water and overuse of sulfur-coated urea.

• What management practices can help prevent the black layer:

★ aerification;
★ light irrigation;
★ use of nitrate fertilizer — 1/4 to 1/3 of a pound of nitrogen per 1,000 square feet per application because of high salt index;
★ avoid applications of sulfur.

Reprinted from "Lawn Institute Harvests", April 1991; Editor, Eliot C. Roberts

For mowing performance features, nothing else can make this cut.

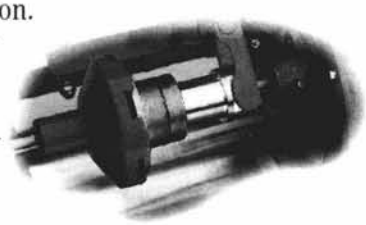
Superior greens start with superior greens mower features. And the all-new Greens King® 422 is loaded with them.

Exceptional side-to-side, front-to-rear balance and a more compact roller base help accentuate your greens' details, rather than your mower's limitations.

Our new 11-blade, electronically balanced reel delivers an unbelievably smooth cut, even down to 5/64." Plus, our exclusive Turf Groomer® option simply produces faster, truer, healthier greens than any imitator.

Clutch performer.

No other walking greens mower can touch the 422 for reliability. Our all-new clutch has been tested out to the equivalent of 70 years of operation, without any adjustment or lubrication.



The same eye for quality extends throughout this unique machine—from our space-age, long-life bearings and bushings, to the most durable drive belts made, to the powerful, high-efficiency 4-hp, 4-cycle OHV Honda engine.

With features like drop out drive drum, reel and bedknife, and easy, slide-apart traction roller with built-in differential, the Greens King 422 cuts maintenance time as neatly as it cuts grass.

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Upcoming Events — Mark Your Calendar

October 3 — Pro/Superintendent at Glenview Club

October 10 — MAGCS Meeting at Oak Brook Hills C.C.

October 21 — MAGCS Dinner Dance, River Forest G.C.

November 10 — Midwest Clinic and Annual Meeting at Medinah C.C.

November 28-30 — NCTE at Pheasant Run Resort

Penn State vs. University of Illinois

Dudley Smith and Rick Wilson are putting together a bus trip to the football game in Urbana, on November 12, 1994. They are looking for both Illinois and Penn State alumni and friends to go along.

A charter bus will leave the parking lot of Silver Lake C.C. at 8:00 a.m. on the morning of Saturday, November 12. The fare will be $50 per person and will include a game ticket, bus fare, drinks on the bus and a pre-game cookout. Be sure to wear your colors and come along for a good time. Call Dudley at 708/349-1307 or Rick Wilson at 708/729-5117 by November 1.

Mechanic Needed — Call Terry at Woodmar C.C., 219/844-0585.

Congratulations to Fernando Fernandez of Green Acres C.C. on becoming a Certified Golf Course Superintendent recently.

John Stephenson has retired from Pottawatomie Golf Course as of September 9th. John is moving back to his home town of Quincy. John, good luck on your retirement, enjoy it, for you have earned it. Luke Cella has replaced John as Superintendent. Luke has worked for John for eight years.

October 10 - Oak Brook Hills — B. Bossert, P. Taylor
College Championship, 2 man scramble. A college must have at least (2) 2-man teams to qualify for the championship. Championship winner is gross scores only. Your partner must be from the same college you attended. Your team can play with another team from a different college. The winner will be the college with the lowest two team gross total. Prizes will be awarded in both gross and net. Net scores are determined averaging the two handicaps and taking 80%. There will be a non-college open division as well.

MAGCS New Golf Champions for 1994

Gross

Championship Flight
- Tom Robinson 73
- Al Pondel
- Bob Kronn

First Flight
- Mark Thibault
- Kerry Blatteau
- Jim Roberts

Second Flight
- Paul Schaefer
- Steve Jump
- Craig Josclyn

Third Flight
- Don Ferreri
- Jim McNair
- John Gurke

Senior Flight
- Ken Goodman
- Keith Fuchs
- Fred Hall

Commercial Flight
- Trent Bradford
- Charlie Brogler
- Richard Kepshire

Net

Championship Flight
- Randy Wahler
- Tim Scott
- Ed Fischer

First Flight
- Dan Anderson
- Joel Purpur
- Dave Blomquist

Second Flight
- Steve VanAcker
- Brad Johnsen
- Jay Druhan & Bob Lively

Third Flight
- Bob Padula
- Brad Helms
- Don Cross

Commercial Flight
- Randy Kane

Left to right: Gross Champions — Paul Schaefer, Don Ferreri, Mark Thibault, Ken Goodman, Tom Robinson, and Trent Bradford

Left to right: Net Champions — Randy Wahler, Randy Kane, Bob Padula, Steve VanAcker, and Dan Anderson

Photos by Ray Schmitz

For Sale: Tow behind topdresser — any reasonable offer. Call Ted Mochel at Woodbine G.C., 708/301-1276.

The annual white water rafting trip by MAGCS members was exciting and the Illinois Lawn Inc. celebrating 40 years will have follow-ups in the November issue.

President, Alan Fierst calling the September MAGCS meeting to order at Seven Bridges G.C.

Host Superintendent and Arrangements Chairman, Don Ferreri, presenting Joel Purpur an award for 2nd place in the first flight, net division.

Fertilization — Fall and Late Fall Style

by Paul E. Rieke, Crop & Soil Sciences
Michigan State University

One of the very important turf management practices during the fall is fertilization. This time of year there are many other activities which require time and attention, but fertilization must also be given priority. For many reasons, turf management practices done in the fall will have a major effect on the quality of turf the following spring. Fertilization is one of the most important.

Phosphorus and potassium in the fall

The key nutrient in fall fertilization is nitrogen. Some have suggested phosphorus and potassium are the key nutrients in fall fertilization. Certainly, these nutrients should be available to turf in adequate quantities. For example, when potassium is limiting, there is a reduction in stress tolerance. Considering the potential for low temperature injury to turf during the winter, if potassium could have an impact on reducing low temperature injury, turf managers should be sure adequate potassium is available to the turf. There is also some evidence to suggest there is an increase in susceptibility to snowmold when potassium is limiting.

To be sure there is adequate potash in the soil, use a soil test for medium and fine-textured soils. If tests suggest potash is needed, appropriate rates should be applied based on recommendation and common sense. For turfs on sands, soil tests for potassium are usually low in spite of a potash fertilization program. Regular, light applications of potash at frequent intervals (spoon feeding) should be made on sandy soils, particularly on sand greens.

When late fall fertilization is practiced, some potash should also be applied along with the nitrogen. On sands, use equal quantities of nitrogen and potash, If needed based on soil test recommendations, phosphorus can be applied in the fall fertility program as well, normally in a complete fertilizer. Seldom is phosphorus limiting on turf. An exception is when no phosphorus has been applied and clippings are routinely removed. Another potential exception is on sand greens. Sands have little capacity to hold phosphate. We have seen several cases of phosphorus deficiency on sand greens, more commonly on new greens, but also on older greens where no phosphorus has been applied for some time. Soil tests must be used to determine need for phosphorus.

When late fall fertilization is practiced, some potash should also be applied along with the nitrogen

Fall Nitrogen

For cool season grasses, both fall and late fall fertilization should be considered. Fall fertilization is best done during September, preferably early in the month. With the weather changes in late summer, the shorter days, cooler nights and more rainfall cause the turf plant to grow less rapid vertically

(continued page 20)

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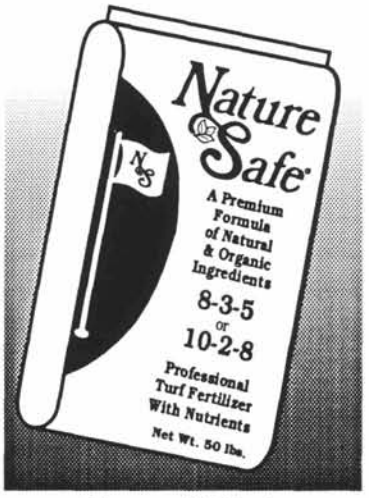

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(Fertilization continued)
than occurs in the spring. more lateral growth results in improvement in turf density after the rigors of the summer. So fertilization in the fall deserves top priority. Carbohydrates manufactured at this time of year will be more likely to be stored, building up the plant for next year.

Appropriate rates of nitrogen applied during the fall period depend on a number of variables, ranging from ½ to 1 lb. N per 1000 sq. ft. On occasion a higher rate may be justified; examples include newly established turf which needs pushing for rapid establishment or a turf which has suffered serious thinning over the summer due to injury from disease, insects, traffic or moisture stress or where an extensive weed population has been controlled, leaving open areas. On general turfs (lawns, grounds, etc.) all the nitrogen can be applied in one application. For greens and other high maintenance turfs, one can split this into two applications if the higher rate of nitrogen is needed. An alternative is to use a fertilizer which contains more slow release nitrogen. Or a spoon feeding program with weekly applications of soluble sources can be used, particularly on greens.

Normally it is best to withhold applications of nitrogen during October to permit the turf to "harden off". This permits the turf to accumulate carbohydrates and reduces the potential for frost-injury should the turf become very succulent before a major freeze. Avoiding nitrogen during October may reduce susceptibility to snow mold as well.

Late Fall Nitrogen

There are a number of opinions as to how and when to use late fall nitrogen applications. This occurs partly because of differences in climatic zones and variations from season to season. Perhaps a more important reason for variations in late fall fertilization is the objective for this practice.

From my perspective, the objective is to *supply nitrogen to the turf after growth has ceased*. The root system is still active since the soil is warmer than the air. Nitrate nitrogen can still be taken up and utilized by the plant. If proper nitrogen fertilization has been practiced during the fall (September) period, the turf should still be green and physiologically active. This permits the plant to continue photosynthesis whenever modest temperatures and some sunlight conditions occur. Carbohydrates manufactured during this time are not "burned off" with growth and clippings, but are stored. This builds up the plant for next spring.

Rate of application of nitrogen will again vary with turf conditions and the philosophy of the manager. For greens, ½ lb. of N per 1000 sq. ft. may be sufficient. If tees are still thin from traffic, especially on par 3 tees, ¾ to 1 lb. N per 1000 sq. ft. may be needed. Fairways could receive ½ to ¾ lb. Lawns & general grounds can receive ¾ to 1 lb. N.

Some turfs may perform better without the late fall nitrogen. Some lawn care companies cannot justify the cost of late fall nitrogen to customers who may not continue with their services next year. However, the quality of the turf the next spring should be excellent when spring sales begin.

Snowmold was severe on many turfs over the winter of 1992-93. Late fall nitrogen applications contributed to greater snowmold in some cases. If turfs are hard hit by snowmold nearly every year and no snowmold preventive program is followed, it may be best to avoid late fall nitrogen.

(continued page 22)

(Fertilization continued)

However, based on plot research done by Dr. Joe Vargas and observations in the field, it is clear that while in most years the late fall nitrogen may increase the amount of snowmold, there is much quicker recovery from any injury caused. The snowmold damage may be more superficial with the late fall nitrogen and/or the recovery is quicker. Either way the next spring the turf returns to a better quality condition sooner with late fall nitrogen.

For the Great Lakes region, we suggest applying the nitrogen after growth has ceased for all practical purposes. This does not mean there will be no need for further mowing, but regular mowing will not be needed. An additional mowing or two may be needed before growth ceases entirely. This occurs anywhere from the last week of October to the second week of November.

Potential problems with late fall nitrogen fertilization include the potential for leaching of applied nitrogen, late fall growth which would require more mowing, affecting snowmold and other winter injury, increase to thatch and other spring growth. In a study at Michigan State being conducted by Eric Miltner and Bruce Branham, which compares late fall nitrogen applications with those emphasizing spring applications, there is no significant leaching of nitrates from either treatment so far. If the nitrogen is applied while the plant is still physiologically active, most of the nitrogen should be used and will not be available for leaching over the winter. There is evidence from Ohio State that late fall nitrogen may increase susceptibility to thatch formation to some degree.

While there may be a small increase in growth during the fall or spring, most turf managers are satisfied that the benefits are far greater than the potential negative effects. There is no evidence for increased susceptibility to low temperatures or crown hydration injury which is caused by late fall nitrogen.

Benefits of late fall nitrogen include good carbohydrate levels in the turf the next spring, good early spring root growth, good fall and spring color and good turf density so there is less potential for establishment of spring weeds. Since root growth of cool season grasses begins before top growth, it is essential that a high level of carbohydrates exist in the plant to initiate that root growth.

The next spring the turf will have a good color. There will likely be a small increase in mowing needed in the spring compared to a turf which receives no nitrogen either in late fall or spring. But the growth will be very limited compared to a turf which receives an early spring fertilization. Avoiding early spring nitrogen has the advantages of reduced carbohydrate loss caused by the excessive growth, less mowing, potential reduction in several diseases and greater moisture stress tolerance during the summer. If we can provide a turf which has good density and fewer weeds, requiring less herbicide as well as greater stress tolerance, why should we not adopt the practice?

With many advantages apparent for late fall nitrogen and few disadvantages, it is clear why so many turf managers have adopted this practice. I have not talked to anyone who has tried late fall nitrogen fertilization who has not continued to utilize the practice for agronomic reasons. This is the best testimonial for late fall fertilization.

Credit: **Hole Notes**

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Facts About Sexual Harassment

Sexual harassment is a form of sex discrimination that violates Title VII of the Civil Rights Act of 1964.

Unwelcome sexual advances, requests for sexual favors and other verbal or physical conduct of a sexual nature constitutes sexual harassment when submission to or rejection of this conduct explicitly or implicitly affects an individual's employment, unreasonably interferes with an individual's work performance or creates an intimidating, hostile or offensive work environment.

Sexual harassment can occur in a variety of circumstances, including but not limited to the following:

- **The victim as well as the harasser may be a woman or a man. The victim does not have to be of the opposite sex.**
- **The harasser can be the victim's supervisor, an agent of the employer, a supervisor in another area, a co-worker or a non-employee.**
- **The victim does not have to be the person harassed, but could be anyone affected by the offensive conduct.**
- **Unlawful sexual harassment may occur without economic injury to or discharge of the victim.**
- **The harasser's conduct must be unwelcome.**

It is helpful for the victim to directly inform the harasser that the conduct is unwelcome and must stop. The victim should use any employer complaint mechanism or grievance system available.

When investigating allegations of sexual harassment, EEOC looks at the whole record; the circumstances, such as the nature of the sexual advances, and the context in which the alleged incidents occurred. A determination on the allegations is made from the facts on a case-by-case basis.

Prevention is the best tool to eliminate sexual harassment in the workplace. Employers are encouraged to take steps necessary to prevent sexual harassment from occurring. They should clearly communicate to employees that sexual harassment will not be tolerated. They can do so by establishing an effective complaint or grievance process and taking immediate and appropriate action when an employee complains.

FILING A CHARGE

Charges of sexual harassment may be filed at any field office of the U.S. Equal Employment Oppportunity Commission. Field offices are located in 50 cities throughout the United States and are listed in most local telephone directories under U.S. Government. Information on all EEOC-enforced laws may be obtained by calling toll-free at 800-669-EEOC. EEOC's toll-free TDD number is 800-800-3302.

If you have been discriminated against on the basis of sex, you are entitled to a remedy that will place you in the position you would have been in if the discrimination had never occurred. You may be entitled to hiring, promotion, reinstatement, back pay and other remuneration. You also may be entitled to damages to compensate you for future pecuniary losses, mental anguish and inconvenience. Punitive damages may be available, as well, if an employer acted with malice or reckless indifference. You also may be entitled to attorney's fees.

The above information is available on a fact sheet in the following formats: print, Braille, large print, audiotape and electronic file on computer disk. For further information, call the Office of Equal Employment Opportunity at (202) 663-4395.

Credit: A Patch of Green, May/June 1994

Dues or Don't

by Joel V. Purpur, CGCS
Vice-President, MAGCS

This is the time of the year when the dues notices are sent out along with change of information requests. As in the past, the M.A.G.C.S. requires payment by December 1, allowing 90 days for payment. Although this is ample time to provide payment, the Association still have to drudge through long delinquent lists to prod the 100 or so members who have not made the deadline with their annual dues. This takes months of unnecessary work by the Executive Secretary, Directors, and volunteers which delays planning for the directory and other timely projects for our members. This is why the MAGCS is forced to stand firm on the policy to remove delinquent individuals from membership for noncompliance to this deadline.

Delinquent individuals will then have to reapply for membership by way of written application as any newly applying prospective member would. Delivery of the **Bull Sheet** is then suspended and non-member fees will have to be paid at monthly golf meetings, providing guests are allowed to golf at that particular meeting.

If an individual values their MAGCS membership privileges, 90 days is more than enough time to provide payment to maintain their membership. If your Club or organization cannot pay by the 3 month deadline, write a personal check and get reimbursed later. Our annual dues are not that high. We all seem to be able to meet the deadlines for our credit cards, mortgages, car payments or other memberships we enjoy, so be responsible, get your dues in on time and maintain your membership with the MAGCS.

Ecological Side Effects of Pesticide and Fertilizer Use of Turfgrass

by Daniel A. Potter, Associate Professor
University of Kentucky

Recent growth of the turfgrass industry has resulted in an increasing number of lawns, golf courses, and other areas being maintained with regular applications of pesticides and fertilizers. Pesticides are indispensable tools of the modern turf manager and there are many situations for which use of a pesticide will be required in order to maintain quality turf. Nevertheless, the unnecessary or excessive use of pesticides can sometimes have undesirable side effects on beneficial organisms and on important processes, such as thatch decomposition and natural regulation of pest populations. Research is underway to clarify how chemical applications affect these processes.

Numerous kinds of predators and parasites are abundant in turfgrass. In Kentucky, more than 30 species of spiders, 42 species of ground beetles (Carabidae), and 40 species of rove beetles (Staphylinidae) were represented in pitfall trap samples from urban turf sites. (Cockfield and Potter 1985). These creatures may be important in maintaining pests at non-damaging levels. For example, in one field experiment (Cockfield and Potter 1984) we placed sod webworm eggs in untreated lawns and recorded their fate over time. Interestingly, turf-inhabiting predators consumed up to 75% of the eggs within 48 hours. Natural enemies that may help to reduce turf pest populations include parasitic wasps, nematodes, spiders, ants, and beetles.

Insecticides applied for the control of pests may also affect beneficial species. For example, one surface application of insecticide was found to reduce predator populations by 60% for as long as six weeks (Cockfield and Potter 1983). In another experiment, natural predation on sod webworm eggs was greatly reduced by an insecticide application (Cockfield and Potter 1984). Although there has been little research on this subject, a few studies do suggest that pest outbreaks on treated lawns are sometimes related to interference with natural control agents (Streu and Gingrich 1972, Reinert 1978, Potter 1982). Research is underway to identify insecticides that provide good control of pests with minimum impact on beneficial organisms.

Another important role that non-target invertebrates play in turfgrass involves decomposition of thatch. Thatch is a tightly intermingled layer of living and dead roots, stolons, and organic debris that accumulates between the soil surface and green vegetation in turfgrass. Problems associated with excessive thatch buildup include restricted penetration of fertilizers and insecticides, reduced water infiltration, and shallow root growth accompanied by increased vulnerability to heat and drought stress.

Excessive thatch results from an imbalance between production and decomposition of organic matter. Soil animals (other than microorganisms) that may contribute to decomposition include earthworms, mites, springtails, millipedes, and others. The main effect of these creatures is in breaking up organic matter and helping to incorporate it into the topsoil, where it can be further broken down by bacteria and fungi. Earthworms also aerify the soil and enrich it with their excreta.

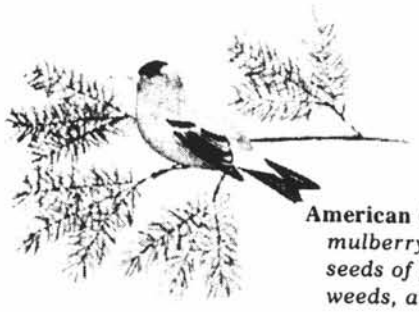
Experiments with thatch pieces buried in mesh bags showed that thatch decomposition is much more rapid with earthworms present than without them. The earthworms pull down the organic matter into the soil, and mix soil into the thatch. Destruction of earthworms by pesticides results in slower thatch breakdown. After only 3 months underground, thatch pieces that were exposed to earthworms contained ca. 33% less organic matter and 33% more soil by weight than pieces from which earthworms were excluded (Potter, unpublished data). Turfgrass pesticides found to be particularly toxic to earthworms in our field tests include Sevin, Turcam, Mocap, and Benlate. Heavy use of ammonium nitrate fertilizer may also affect earthworms.

Applications of 5 lbs. of nitrogen per 1000 sq. ft. per year for seven years resulted in a decline of soil pH (6.2 to 4.8), increased thatch accumulation, and 50% reduction in earthworm populations (Potter et al. 1985). Earthworms are intolerant of acidic soils (Satchell 1967, Edwards and Lofty 1977).

A four year experiment was conducted to study the side effects of a total high-maintenance lawn care program on the turfgrass system. Although changes in predators, herbivores, and decomposers were observed, the overall impact of the program was generally less severe than might be expected given the frequency of pesticide and fertilizer use (Arnold and Potter 1987).

In summary, the intent of this presentation is not to condemn chemical use on turf, but rather to provide "food for thought" for turf managers. There are clearly many situations for which the use of pesticides is essential for the maintenance of quality turf. However, pesticide applications, like human medicines, may have some side-effects, and these must be weighed against the overall benefits that the treatment provides. The accumulated evidence suggests that turfgrass is a complex system with many buffers. Understanding these interactions will make it easier to develop new products and turf management programs that get the job done with minimum disruption of the natural processes that are important to healthy turf. In general, it takes a better turf manager to use less pesticide.

Ways of Attracting Birds



American Goldfinch
mulberry, sunflowers, seeds of garden flowers, weeds, and conifers

Living Screens

Hedges and rows of trees screen off unpleasant views and reduce noise from highways. In crowded neighborhoods they offer privacy for your backyard activities. And they attract birds to your place year after year. Conifers, autumn-olive, dogwood, cotoneaster, or a combination of these make good living screens.

Open Areas

Meadowlarks, bobolinks, and several kinds of sparrows favor open stretches of lawn and fields with few if any trees or shrubs. In seldom-mowed open areas, try planting a variety of native grasses. They protect the soil, and birds and mammals like the variety of foods.

Winter Protection

A windbreak of cedars, spruce, or pines with a crabapple tree tucked in on the sheltered side gives birds a warm, safe place to rest when the snow is deep. A food plot or feeder nearby helps keep the birds with you through the snowy months.

Cardinal
autumn-olive, corn, dogwood, sunflower, various berries

Eastern Bluebird
dogwood, honeysuckle, mountain-ash, redcedar, various berries

Living Fences

Hedges or rows of honeysuckle, dogwood, or autumn-olive can replace a wire fence between fields, can divide up fields, and can protect the house area. Cardinals, brown thrashers, and mockingbirds find living fences ideal.

Identification of Soil Types

The United States Department of Agriculture defines soil separates as having the following diameters in millimeters: very coarse sand 2 to 1; coarse sand 1 to 0.50; medium sand 0.50 to 0.25; fine sand 0.25 to 0.10; very fine sand 0.10 to .05; silt .05 to .002; and clay below .002 millimeter.

SAND:

Sand is loose and single grained. The individual grains can be seen or felt. Squeezed in the hand when dry, it will fall apart when pressure is released. Squeezed when moist; it still forms a cast, but will crumble.

SANDY LOAM:

A sandy loam is a soil containing mostly sand but which has enough silt and clay to make it somewhat coherent. Squeezed when dry, it will form a cast which will fall apart; but if squeezed when moist, a cast can be formed that will bear carefully handling without crumbling.

LOAM:

A loam is a soil having a mixture of the different grades of sand, silt, and clay in such proportion that the characteristics of no one predominate. Squeezed when dry, it will form a cast that will bear careful handling, while the cast formed by squeezing the moist soil can be handled quite freely without crumbling.

SILT LOAM:

A silt loam is a soil having a moderate amount of the fine grades of sand and only a small amount of clay over half of the particles being of the size called "silt". When dry, it may appear quite cloddy, but the lumps can be readily broken; and when pulverized, it feels smooth, soft, and floury. When wet, the soil readily runs together. Either dry or moist, it will form casts that can be freely handled without breaking.

CLAY LOAM:

A clay loam is fine-textured which usually breaks into clods or lumps that are hard when dry. When the moist soil is pinched between thumb and finger, it will form a thin "ribbon" which will break barely sustaining its own weight. The moist soil is elastic and will form a cast that will bear much handling. When kneaded in the hand, it does not crumble easily.

CLAY:

A clay is a fine-textured soil that usually forms very hard lumps or clods when dry and is quite elastic and usually sticky when wet. When the moist soil is pinched out between the thumb and finger, it will form a long, flexible "ribbon".

Source: Our Collaborator

REMEMBER TO WEAR YOUR NAME BADGES AT OUR MEETINGS.

Forward Tees; The Key to Playability

by Mike Schulz — Mike Schulz Golf Designs

I've always felt that a major flaw in the design of most existing golf courses is the lack of properly located forward tees. This flaw results in golf courses that are just not as playable as they should be for a large number of golfers. How did this happen? I think it happened because, in many cases, golf course owners and golf course architects have lost sight of the purpose of golf. To me, the purpose of golf can be summarized in two statements:

Golf is a game, it is supposed to be fun.
Golf is a game of accuracy, not a game of distance.

We shouldn't ever forget that golf is a game. As a game, people will only continue to play it if it is fun and enjoyable. That is why playability is so important to the success of golf.

Secondly, we should never forget that golf is a game of accuracy. I've always thought that distance is overrated as a factor in golf. We play to a 4½ inch diameter hole. We don't count the number of strokes to cross a line, we count the number of strokes to put the ball in that little hole. We win or lose holes or matches independent of how far we hit each stroke. The scorecard never indicates how far we hit the ball. A 2 inch putt counts the same as a 265 yard drive. Except in a long drive contest we never even measure and record the lengths of our shots. Golf truly is a game of accuracy, not distance.

With those two ideas in mind, it is easy to see that we have shortchanged a large part of the golfing population. For the most part, we've shortchanged women golfers, but we've also shortchanged our beginners, our juniors, and many seniors. We've cheated them of the joy of playing the game of golf as it is meant to be played, by not giving them forward tees to match their capabilities.

Since golf is a game of accuracy, all golfers should have a legitimate chance to reach each green in regulation with their best strokes. All golf courses should be designed with a full range of multiple tees, so that if the golfer can not consistently reach the greens in regulation, then he or she should be able to most up to a shorter tee.

One of the things that I noticed from my very first day as a caddy, many years ago, in my hometown, was that women do not play the same game of golf as men play. Women play a game that often finds them hitting a driver and an iron to a par 3 green and a driver, two woods and an iron to a par 4 green. Par 5s are almost too painful to talk about. Many women have never reached a green in regulation on a par 4 or par 5 hole. It is really a credit to women, that they continue to play golf on golf courses on which there is no possibility that even if they hit their very best shots, that they can hit a green in regulation, and par a hole by two putting the green. Men, in their competitiveness, would never play golf if there was no chance that they could reach a green in regulation. To get an understanding of the issue, men should imagine playing golf on a 8400 yard par 72 golf course, where the par 3s average 250 yards, the par 4s average 480 yards and the par 5s average 650 yards, and you could never reach a green. It would soon be seen as a exercise in futility. Most men would never play a round of golf after their first attempt.

(continued page 30)

(Forward Tees continued)

Historically, most golf courses were designed for male golfers, and had no forward or women's tees. When women began to play golf, women's tees became a afterthought in the design. There was no architectural theory behind the location of the forward tees. They were located just a little forward of the men's tees, ... "because women don't hit the ball as far" ... They didn't consider that women only hit the ball 65-75% as far as men.

Now is a good time for golf course owners, managers and superintendents to look at their courses and see how they are set up for all their golfers. If necessary, they should institute a program to create a full range of teeing areas, with special emphasis on the forward tees.

How do you locate the forward tees properly? I think that first of all, par should be the same for every tee on the hole. I have never understood why a hole should be a par 5 for women when it is a par 4 for men, or why a course would be a par 72 for men and a par 76 for women. It only proves that the women's tees were not located correctly in the first place. Secondly, the rule of thumb that I use is that the club selection for all golfers playing the hole should be similar. For example, if the average male golfer usually uses a well played driver and a 7 iron to reach a green on a par 4, then the forward tee should be located so that most women would use a well played driver and a 7 iron to reach the green. Using average distances that men and women hit each club, in this way, can be very helpful in locating forward tees. Each hole can be analyzed for the typical average male club selection and then converted to a distance based upon the average women's yardage for the same clubs. The proper tee location can be determined based upon that distance, as well as the hole par, hazard locations, hole shape and topography. This should result in a golf course, where the total yardage from the forward tees ranges between 4800-5200 yards, with 5000 yards being a good target length. Don't be afraid that 4800 yards is too short. Experience has shown me that it will give women golfers a challenging, enjoyable and fun course, that allows them to play the game of golf the way men have always played it, with the premium where it should be; on accuracy.

There are several benefits to having properly located forward tees on a course. Women, juniors, beginners and some seniors will be able to play golf as it is meant to be played. They will find a game more within their capabilities and will be encouraged to continue to play. Seniors, who have lost only distance and not accuracy, feel or touch, will be able to once again enjoy the game as they did in their younger years. Play will speed up. Wear can be reduced from other tees. And the leading edge of the fairway cut can be moved further down the fairway, reducing the amount of fairway maintained.

Note that women who do hit a long ball, stil have the option to play from the middle or regular tees, because courses can be and should be rated from several tees for women, just like they are for men.

So take a look at your golf course. Is it really playable for all golfers? If not, look at instituting a program to locate and build a proper set of forward tees and let women, as well as beginners, juniors and seniors the chance to finally play golf. Remember: **Golf is a game. It is supposed to be fun. & Golf is a game of accuracy not a game of distance.**

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