#### The Use of a Flail Mower in Golf Course Management

by Dave Ward, Ravisloe C.C.

In the spring of 1983, a greensaire fairway airification program was initiated at Ravisloe Country Club. In order to receive maximum benefit from the soil removed during airification, the plugs were verticut with a Toro GMIII. This process proved to be too much strain on the greensmower. When an equipment distributor demonstrated the Mott flail mower as a possible vertical mower/dethatcher, it seemed the machine might have potential for breaking plugs on the fairways.

After some experimentation, a Mott model 88 flail mower with fine cut, reverse rotation, and a front deflector shield was purchased. It was used to break up plugs in the fall of 1983 with excellent results, except for some ripping of turf due to poor roots last fall. When used this spring, no grass was ripped regardless of terrain. Next spring, a drag mat will be installed behind the Mott to drag the soil into the turf before the fairways are blown off.

This past spring, the Mott mower was used to aid in spring cleanup. After all of the large branches were removed, the flail mower, with vertical knives was run over the remaining small debris. This process chopped the small branches into such small pieces that in most cases a sweeper was not needed. The machine proved very effective under willow trees. Previous to using the Mott, spring cleanup required eight men about one month to hand rake the course. This year, four men cleaned the course in about two weeks.

The flail mower was also used last fall to mulch leaves. It is not as effective as a woods mower, but with some modification in shields, might work as well. This fall, the flail mower will be used to aid in seedbed preparation.

Credit: Verdure 7/84

#### **Putting Numbers in Perspective**

Concern over chemical misuse is warranted, but alarm over "chemicals" is not. Perhaps one way to begin reducing public fear is to put the pertinent analytical numbers in perspective.

Since figures representing parts-per-billion or parts-pertrillion are often used in reports on contaminants found in chemicals, some perspective on those numbers seems particularly desirable — especially for any golf course manager who wants to help golfers understand factors of potential exposure and risk on the course. The numbers that follow here are tendered with that interest in mind.

One part per billion equals:

- 1 bogey to 3,500,000 golf tournaments.
- 1 lob to 1,200,000 tennis matches.
- 1 penny to \$10,000,000.
- 1 square foot to 36 square miles.
- 1 pinch of salt to 10 tons of potato chips.
- 1 inch to a 16,000-mile trip.
- One part per trillion equals:
- 1 postage stamp to an area the size of Dallas.
- 1 square inch to 250 square miles.
- · 1 hairbreadth to a trip around the world.

(The above examples originated with Dow Chemical Co.)



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#### History of the Hole Cup by Brad Earl Anderson, Asst. Supt. Old Elm Club, Highwood, Illinois

"Golf means the long and leary putt that glides into the cup." Robert K. Risk, Songs of the Links. 1919

Golf historians believe that the first hole cup was a common length of land tile which golfers at St. Andrews placed in the holes of their greens. Legend has it that they were distressed over the constant degradation suffered of the hole and its rim, and that perhaps the land tile may have helped to control the problem. Apart from environmental wear of the hole, the golfer himself was largely responsible for degradation; for what with the wooden tee not yet in existence, the golfer would - upon holeing out - grab a handful of soil from the hole for shaping into a tee for his proceeding tee shot. Mid-nineteenth century photos of golfers on putting greens show that very often the hole was ragged, and in some cases at least one foot wide!

Some clubs had their own rules against "robbing the hole of soil" as it were. The 1815 rules of Aberdeen stated that ... "No sand is to be taken for teeing within ten yards of the hole", and the 1834 rules of the Royal Musselburgh Club stated that ... "The turf of the putting green shall not be raised up for a

tee, and no caddy shall be employed who does not carry a bag of moist sand or clay for tees."

The legendary St. Andrews land tile/hole cup was in use as early as 1850. Its dimensions were  $5\frac{1}{2}$  inches outer diameter by 6 inches deep. The  $5\frac{1}{2}$  by 6 dimensions of the original hole cup has for years raised a serious question as to why the Royal and Ancient went on to lay down the law of  $4\frac{1}{4}$  inches outer diameter by at least 4 inches deep ... some 40 years later. Was the  $5\frac{1}{2}$  outer diameter too easy, or were other considerations taken besides that of degree of difficulty. The exact reasoning is unknown, but there are at least two very good theories as to how we have arrived at the present day dimensions.

1). It could be that the 4¼ by 4 was common for many years at many clubs long before the R&A made it rule. It is known that the oldest hole cutter in existence today (part of a collection of golf antiquities from the Royal Musselburgh Club) had/has the very same dimensions of 4¼ by 4, and according to the Musselburgh minutes of **March 13, 1829**, the Hon. Secretary was "authorized to pay the account of Mr. Gays for the instrument for forming the holes". So as early as 1829 these dimensions were common to at least one club.

2). The practice of inserting flag poles was not yet generally common at St. Andrews during the time when the land tile/hole cup was being developed. Perhaps the later use of flag poles may have been coincidental to the hole cup becoming standardized, and the metal cup being adapted to receive it.

In any event, the dimensions of 4<sup>1</sup>/<sub>4</sub> by 4 seems to be with us to stay, despite the various attempts throughout history to tamper with it. In 1934, at the Year-round Open at the Miami Biltmore Course in Coral Gables, Florida, Gene Sarazen actually convinced the officials to enlarge the hole to 8 inches! The event served only to prove that good putters still sunk em, and poor putters still missed em.





#### Upcoming Events - Mark Your Calendar

October 1st — Midwest Meeting at Cress Creek in Naperville October 9th — Lesco & Turf Seed pig roast and seed seminar at Indian Lakes C.C.

- October 24th & 25th The Wisconsin Golf Turf Symposium at the Pfister Hotel, Milwaukee, Wisconsin. This year's theme is "Directions in Golf Course Management". Subject matter will include Research & Development information on pesticides, soils and popular constraints, trends in golf course design and new challenges. Contact: Bob Welch 1 (414) 225-2222.
- October 28th 31st Management Workshop for Golf Course Owners & Operators - Wheeling, West Virginia. Contact: Lorraine Abbot (312) 386-4960

November 7th - Annual Meeting, Cypress Inn, Hinsdale, IL

November 17th - Fall Dinner Dance at River Forest G.C.

December 10th - 12th - NCTE at Rosemont O'Hare Exposition Center.

January 7th & 8th, 1985 - GCSAA Seminars at Pheasant Run

Bruce Williams has done a little digging about accommodations in Washington D.C. for the upcoming National GCSAA Conference. For anyone wishing to stay 7 days or longer in D.C. in February there are one and two bedroom condominiums which are available at \$65.00 per night (single bedroom) and \$85.00 per night for the two bedroom condo. Contact Sylvia Nomicos of Condominium Rentals, Ltd. at 1 (800) 638-4888 for information. Literature will be mailed to you. This is an excellent alternative to hotel rooms. Washington has a good RTA system to get around town.

Congratulations to Sue & Jim Reed!!! They are the proud parents of Phillip Edward born August 30th. Phillip weighed in at 10 pounds and was 23 inches long. This was certainly a bright moment for the grandparents this season — Jean & Ed Stewart, for they have had a tough year with Ed being in and out of the hospital so many times. Ed is back on the course and feeling much, much better.

The deepest sympathy of the members of the Midwest Association of Golf Course Superintendents is extended to the Winter's family on the death of Robert Winter in August. Bob was a long time member of the MAGCS and Superintendent of the Winnetka Golf Club for many years.

#### Annual Fall Dinner Dance

Saturday, November 17th, 1984 River Forest Golf Club, 15W468 Grand Ave. Elmhurst Hosts: Jean & Ed Stewart Cocktails & Hors d'oeuvres starting at 6:30 p.m. Dinner at 7:30 p.m. Dancing from 9:00 p.m. to midnight Bring your best gal and your dancing shoes!

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#### The Winners at our Annual Golf Tournament this year are as follows:

A Class:	1st	Tom Robinson (74)		
		Gary Dorsh		
		Al Pondel		
B Class:	1st	Joe Williamson (79)		
		Ed Smith		
		Tom Nestor		
C Class:	1st	Albie Stoudt (85)		
		Tom Morgensen		
		Craig Joscelyn		
D Class:	1st	John Potthoff		
		Bob Breen, Jr.		
		Al Fierst		
Superintendent:		1st - Al Pondel (76)		
		2nd - Craig Marfia		
Senior:		1st - Ed Smith (79)		
		2nd - Bill Kraft		
Associate:		1st - Gary Dorsh		
		2nd - Tom Nestor		

Dave Meyer will be getting busier if Carson Pirie Scott finalize their plans to build another course. It's in the works that the new course will be around Midwest Road and 35th Street.

It is sad to report that Cecil Kerr's wife passed away on September 13, 1984. The sympathy of the Midwest Superintendents is with Cecil at this time.

Some of our friends are quite busy this fall: Mike Bavier at Inverness is installing double row Toro sprinklers with Motorolo controllers. Julius Albaugh has started a Toro VT3 with a combination of about 50% single row and 50% double row where the need arises. He will also have a complete new pumping plant. John Ebel is building a new green and installing lots of drain tile. Plus he is putting up a new building to keep immaculate. He says he gets bored in not having enough space to keep clean ...

#### For Sale

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#### Plant a Tree This Fall by James A. Fizzell, Sr. Ext. Adviser University of Illinois

The nip in the air tells us it is planting time again.

Providing cooling shade during hot summer months is just one of the benefits a tree provides. They act as insulators from city noise, dust and pollution. Just their presence softens the landscape, giving beauty and elegance to an otherwise sterile environment. And what is more restful to the soul than to listen to the gently rustling of leaves on a breezy summer night.

Trees provide home, restful haven, and sometimes food for the sparse city animal life — the squirrels and bird that children often appreciate more than do adults.

Perhaps most important, trees absorb much of the carbon dioxide pollution released by vehicles in the city and in turn release oxygen. In fact, an actively growing one acre grove of trees releases enough oxygen in one year to support 18 people.

Look around you. See what the proportion of trees to concrete and rooftops you see, and you will understand the need to plant trees.

Many trees do well in Chicago. Some are detailed below. NORWAY MAPLE. A broad, spreading shade tree that matures at 50-75 feet. Fall color is bright yellow. Shallow rooting makes it undesirable for planting near sidewalks, and its dense foliage makes it difficult to grow a lawn beneath the tree. Popular clones ("varieties") are 'Cleveland', 'Crimson King' (purplish-red summer leaves) and 'Greenlace'.

**RED MAPLE**. Another dense, spreading maple, growing to 60-80 feet high. Red flowers and fruit in spring are showy and attractive, as is its yellow to brilliant red foliage in the fall. Many clones do poorly in our alkaline soils. Common varieties often do better.

SUGAR MAPLE. Faster growing than Norway maple but slower than Red or Silver maple. Grows to 60-80 feet, with moderately dense foliage. Magnificent fall colors of golden yellow to orange to red. Best maple for shade tree use. Important clones are 'Columnare' and 'Green Mountain.'

**OHIO BUCKEYE.** Similar in appearance to the Horse chestnut but tree form is more rounded and uniform. Less disease prone than chestnut. Grows to 35-40 feet with large, attractive greenish-yellow flower clusters in the spring. Fall color is orange-red. Dropping fruits, loved by squirrels and used by children for necklaces and other crafts, may be messy for a short period in the fall.

**RIVER BIRCH**. Rapidly becoming a desirable substitute for the white birch because of its high resistance to bronze birch borer. A graceful tree of 60-75 feet with gently drooping branches. The exfoliating (rolled back) bark varies from near white to bronze. Fall color is yellow. A good tree for naturalized plantings.

**KATSURA TREE**. A magnificent tree reaching 60-100 feet and becoming wide-spreading when allowed to develop multiple trunks. Relatively pest free, with yellow to yellow-orange fall color.

AMERICAN AND GREEN ASH. The American reaches 75-80 feet; the Green 50-60 feet. Both have moderately dense foliage and are adaptable to a wide range of growing conditions. Fall color is basically bright yellow although the leaves of American ash may be mottled with purple.

(cont'd. page 16)

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#### (Plant a Tree cont'd.)

HONEY LOCUST. An excellent adaptable tree where light shade or a grass carpet under the tree is wanted. Reaching 60-90 feet with a rapid growth rate, there are many seedless and thornless clones. A rugged but graceful city tree requiring little fall cleanup of its tiny yellow leaves. Some important clones are 'Imperial', 'Majestic', 'Moraine', 'Shade Master', and 'Skyline'.

**RED OAK**. Beautiful hardy tree reaching 60-100 feet. The Red oak is one of the best trees for ornamental planting here but must be planted in well-drained soil. Fall color ranges from red to brownish-red or brown.

LITTLELEAF AND SILVER LINDEN. Both are dense trees reaching 60-90 feet. Both are slow growing, but hardy. The foliage of Silver Linden is silvery underneath. Fall color is yellow for both.

#### Soil Amendments and Tree Establishment by Carl E. Whitcomb

Soil amendments have long been utilized in an attempt to modify soils on the planting site with the hope of improving tree growth and rate of establishment. Recommendations vary in terms of what should be used as a soil amendment and the rate or proportion of the material. Our original study was to determine the optimum amount of peat, vermiculite, ground pine bark or sand to be added at the time of planting to aid the establishment of trees and shrubs in the landscape. Over a 6-year period, five studies were conducted with varying rates and materials as soil amendments with and without irrigation and on three different soil types: a very sandy soil, a moderately good clay loam soil, and a very poor subsoil clay. The optimum amount of soil amendment to add was none. Pine bark was most detrimental to both establishment and growth followed by peat and sand. Vermiculite, although not beneficial when compared to no soil amendment added, was not as detrimental as were the other materials. When test plants were excavated, the root system in the amended soil treatments were confined primarily to the amended area, and few extended out into the surrounding soil. By contrast, where no soil amendment was used, the roots extended far beyond the original planting hole and thus were more well anchored and had a larger volume of soil to draw on for water and nutrients compared to the amended treatments. Adding additional fertilizer to the amended soil treatments was only slightly helpful in overcoming the growth restriction of the soil amendments. This is thought to be due to the nitrogen tie-up by the decomposition of the organic materials such as peat and ground pine bark. When studies were made of waterholding capacity, the amendments increased the amount of water held immediately following irrigation, however, after several weeks, the amended soils were dryer than those without amendments. This is probably due in part to the higher evaporation rate of the amended soils at the soil surface plus the fact that the root system of the test plant was confined almost entirely to the amended soil and was not drawing from surrounding soil moisture as was the case when no soil amendments were added. Peat and ground pine bark should not be used as soil amendments but can more effectively be used as a mulch on the soil surface to reduce soil temperature, soil erosion, and compaction.

Credit: "Our Collaborator" 4/84



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#### Walnut Trees "Zap" Others

Black walnut trees can stress, or kill, other plants growing near them. Symptoms are wilting and yellowing of the leaves, death of plant parts, and death of the entire plant. But some plants grow well near walnut trees.

The difference between plants that can grow near walnut and those that cannot depends upon their tolerance to the chemical "juglone" (5 hydroxy-1, 4-napthoquinone). Juglone is produced in walnut leaves during the growing season, then moves into the roots. Juglone is a strong respiration toxin which may prevent plants from fully utilizing energy the leaves have captured. High concentrations of juglone in some plants cause so much energy to be wasted that the plant cannot meet the minimum energy levels required for life.

Juglone is released from walnut trees in several ways: leaves falling and decaying, nut husks, root leakage and decay, and rain-drip from the crown. Juglone is poorly soluble in water and cannot move far in the soil. But only minute amounts are required to poison some plants. Plant roots can encounter joglone when they grow within ½ to ¼ inch from walnut roots. Most walnut roots can be found at a distance of one to two times the crown radius from the trunk, but some may extend out as far as three or four times the crown radius.

Plant roots will also encounter juglone when growing under the drip line or crown-edge of walnut. The juglone in this areas comes from erosion of the surfaces of leaves, twigs, and buds by rain, and from decay of leaves, twigs, and nut husks. Many plants that can survive near a walnut, cannot survive under the crown-edge of the tree because of the larger amount of juglone present.

Plants to keep away from walnuts are: pines, birch, hackberry, apples, basswood, blackberry, domestic grape, tomatoes, potatoes, and alfalfa.

Plants that can grow well with walnuts are: red cedar, hickory, elm, sycamore, crab-apple, hawthorn, cherry, locust, maple, black raspberry, wild grape, Kentucky blue grass, and clover.

Gardens should be kept away from walnut trees. Leaves, bark, or wood chips of walnuts should not be used to mulch plants. In agricultural fields, no juglone damage should exist if constant tillage keeps cutting back the walnut roots from the field. With minimum-tillage becoming more wide-spread, fields with walnut trees on their edge may have small pockets of dwarfing due to juglone.

Other trees also produce juglone. For example, butternut, English walnut, pecan, shagbark hickory, and bitternut hickory produce juglone that can affect other plants. But these species only produce a relatively small amount compared to black walnut.

**Credit: The American Tree Farmer** 

"Those of you who think you know all about everything are very annoying to us who do." RLH







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#### Repair Those Ball Marks and Divots by Roy Damer, Chicago Tribune

Stan Mikita scored 600 goals during his Hall of Fame hockey career with the Chicago Black Hawks. Now his "goal" is to see people stop mistreating golf courses.

Mikita is the teaching pro at Kemper Lakes, a well-maintained public course in Hawthorn Woods. But he winces when he looks out of the club house windows over the beautiful landscape.

"I'm concerned about the abuse people give to golf courses — from pros to a guy who shoots 150," says Mikita. "I've seen pros drive their carts onto tees and some golfers who step out of their carts right onto the green."

In addition to driving carts too close to tees and greens, some golfers don't fix their ball marks on the putting surface and don't replace divots out on the course.

"Things are getting worse," moans Mikita. "When I play golf in the evenings after work, it looks like the crater of the moon out there.

"That's why I can't play here. I'm looking all over the place checking on the condition of the course and I don't concentrate on my game. I just can't enjoy it here, and this is one of the nicest courses around."

Mikita gave a good example of how even a new layout is mistreated.

"I was asked to play at the opening of Forest Preserve National," he says. "There are 120 invited guests — the first golfers to play the course. There was a shotgun start and my group went from the first tee. When I reached the third green, I had already come across four divot marks. Only eight people had gone through those two holes and already there were four divots."

There are two principle reasons golfers should fix ball marks on greens, replace divots and keep carts away from greens and tees:

 It will help maintain the fine playing conditions that golfers want.

2. It will help keep the cost of golf down. If an employee does that work, the cost eventually is passed on to the golfers.

This is a problem that doesn't just affect public courses. Members of private clubs report the same conditions exist there.

"Don't get me wrong," said Mikita. "The majority of players will fix the course. But there are perhaps 10 percent of golfers who will leave everything whether they're playing at Medinah, Butler National or anyplace."

"We have certain rules at Kemper Lakes but essentially we ask people to leave the course the way they found it. And it would be nice if they'd fix an extra ball mark along the way, too."

Here's a graphic illustration of why it's important to fix ball marks. If it's fixed within 5 minutes, it will start healing in 24 hours. If it isn't repaired, it takes 15 days to start healing.

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