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## *The Wisconsin Survey*

# **AERIFICATION 1994: Today's Techniques and Tomorrow's Trends**

*By Robert J. Erdahl*

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Close your eyes for a moment and pretend you are back in 1989. Imagine you are sitting in the audience at the XYZ Turf Conference and Dr. Root is presenting a summary of his work with a machine that blasts holes in the soil with high pressure water. "Core aerification may be a thing of the past!" Dr. Root proudly concludes. You nudge your friend next to you with your elbow and whisper, "I hear Dr. Root's reputation for growing grass is matched only by his penchant for smoking it!" Dr. Root leaves the podium to a polite, but less than enthusiastic, round of applause.

The next speaker is Joe Tine, a golf course superintendent from Compaction Country Club. His topic is "Aerification—The Deeper, The Better." You turn to your buddy and say, "Now we're getting somewhere!" After the lights go down and the first few slides have been shown, however, your buddy has to reach over and lift your jaw off of the floor and check your pulse to see if a call to 911 is necessary. You are in shock because Mr. Tine has just shown pictures of a tractor-powered machine punching huge holes in a putting green. "Take my word for it," Mr. Tine assures his audience, "The putting surface is as good as new in less than two days!" That's it! Enough of Dr. Root and Mr. Tine. You leave the room to get some fresh air and hopefully some sense back into your head.

Fast forward now to 1994. You are standing on your ninth putting green. In front of you are two machines; one is blasting holes with high pressure bursts of water and the second is punching holes that could swallow a rolled up newspaper. And guess what? You are trying to decide which one to buy! What seemed impossible and/or crazy just a few years ago is about to become a part of your normal aerification program. Yet, how can you be sure that these new machines are truly better than your current aerifica-

tion technique and not just a different and more costly approach to the same end result? Even after a demonstration on your own golf course, you may still have lingering concerns. Well, how about asking some other golf course superintendents what they think about the current and future state of aerification equipment and techniques. Better yet, why not let me ask the questions. That's right, it's time for another survey! My subject this time is "Aerification 1994: Today's Techniques and Tomorrow's Trends."

I realize my introduction to this article takes a rather flippant view of some recent changes in aerification equipment. There is no doubt in my mind, however, that aerification is one of the single most important aspects of a successful golf course management program. And while we all know the agronomic reasons for aerification, I think most of us could benefit from the aerification experiences of our fellow WGCSA members. With this in mind, I sent out the 1994 Aerification Survey to fifty superintendents at all different types of Wisconsin golf courses—private, daily fee, resort and municipal. Many thanks are due the thirty-two superintendents who took the time to fill out and return the surveys. It is

their answers that make this article possible.

The 1994 Aerification Survey is divided into four subjects: Putting Greens, Tees, Fairways and Roughs. For each subject, the following questions were asked:

1. When do you aerify?
2. What machine(s) do you use?
3. What type of tine(s) do you use?
4. How do you handle your cores?
5. Do you use a soil amendment?
6. Do you overseed in conjunction with aerification?
7. Do you fertilize in conjunction with aerification?
8. Any additional comments?
9. What would you like to have to make your aerification program more successful?

I think the best place to begin our aerification discussion is putting greens. Why? Well, for most of us, putting greens provide our biggest aerification challenge. And like many other aspects of golf course management, aerification techniques used on putting greens always seem to filter down and show up in our tee and fairway aerification programs.

While I waited for the surveys to be returned, I took some time to look

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TABLE 1

**Comparison of Machines Used for Putting Green Aerification in the 1989 and 1994 Wisconsin Surveys**

Machine	1989 <sup>1</sup>	1994 <sup>2</sup>
CoreMaster	2	2
Floyd-McKay	—	1 <sup>3</sup>
Jacobsen AeroKing	—	1
Ryan Greensaire	17	14
Ryan GA-60	—	2
Toro Greens Aerator	12	11
Toro Hydroject	—	7
Verti-Drain	—	6 <sup>4</sup>

Values indicate number of golf courses in each category. Golf courses may be listed more than once in each year.

<sup>1</sup>25 golf courses were surveyed in 1989.

<sup>2</sup>32 golf courses were surveyed in 1994.

<sup>3</sup>Only four putting greens were aerified.

<sup>4</sup>Two golf courses aerified selected putting greens.

TABLE 2

**Comparison of Scheduling for Putting Green Aerification in the 1989 and 1994 Wisconsin Surveys**

Time of Year	1989 <sup>1</sup>	1994 <sup>2</sup>
April	0	4
May - Before Memorial Day	3	8
Week after Memorial Day	9	2
June	17	5
July	0	5
August	0	7
Labor Day - September 15	10	10
After September 15	4	10
Once a month, May-September	0	3

Values indicate number of golf courses in each category. Golf courses may be listed more than once in each year.

<sup>1</sup>25 golf courses were surveyed in 1989.

<sup>2</sup>32 golf courses were surveyed in 1994.

TABLE 3

**Comparison of Tine Sizes Used in Putting Green Aerification in the 1989 and 1994 Wisconsin Surveys**

Tine Size	1989 <sup>1</sup>	1994 <sup>2</sup>
1/4" Quadratine	1	4
3/8"	3	2
1/2"	18	18 <sup>3</sup>
5/8"	3	4
3/4"	0	3 <sup>4</sup>

Values indicate number of golf courses in each category. Golf courses may be listed more than once in each year.

<sup>1</sup>25 golf courses were surveyed in 1989.

<sup>2</sup>32 golf courses were surveyed in 1994.

<sup>3</sup>Two golf courses use 1/2" solid tines on the Verti-Drain.

<sup>4</sup>All three golf courses use 3/4" solid tines on the Verti-Drain.

back at the "Putting Green Management" article I wrote for the July/August 1989 issue of *THE GRASS ROOTS*. As I reviewed the segment on aerification, I wondered how many changes in putting green aerification I was going to discover in my 1994 aerification Survey. If the answers on my own survey were any indication, things had changed quite a bit in the last five years.

As the surveys began to come in, it didn't take a genius to conclude that putting green aerification had indeed come a long way in five years. To see just how far, let's take a look at the three Tables (1, 2 and 3) that compare the three questions that were asked in both the 1989 and 1994 surveys. Before taking a look at the numbers, I must point out that the 1989 survey only had twenty-five respondents, so direct comparisons with the 1994 survey are not always possible.

As you can see in Table 1, the number of different types of machines used to aerify putting greens increased from three in 1989 to eight in 1994. It appears that the three machines used in 1989 still maintain their popularity in 1994. However, the numbers clearly show a shift to the more high-tech aerification offered by the Toro Hydroject and the Verti-Drain's deep tine approach to aerification. In addition, two superintendents are successfully using Ryan GA-60s on their putting greens. A GA-60 on putting greens! Those guys have a lot more chutzpa than I do! Also note that one superintendent was happy with the results after aerifying four of his problem putting greens with the Floyd-McKay unit. And oh yes, the Jacobsen AeroKing was able to crack into the survey at one golf course.

The scheduling of putting green

aerification has changed quite dramatically since 1989. Table 2 shows us that putting green aerification has been moved closer to both ends of the golfing season by many superintendents. Unfortunately, this seems to be based on the need to stay out of the golfers' way rather than any newly discovered agronomic principles. Just take a look at April. We used to aerify putting greens in April for only one reason—winterkill. Now, four golf courses actually plan their putting green aerification that early! Also look at the relationship of Memorial Day to putting green aerification. For many of us, the week after Memorial Day used to be a perfect time to aerify our putting greens. Not any more; now many superintendents are aerifying their putting greens before Memorial Day—in many cases in very early May. Skipping past June, July and August for a moment, let's look at the numbers for September. While the week immediately following Labor Day remains popular, the latter part of September has now become the time for putting green aerification at many golf courses. Once again, putting green aerification has been pushed out of the way of the golfers.

Let's return now to June, July and August. Who actually schedules putting green aerification in the summer? That's right, the boys (Sorry, not politically correct!) with the Toro Hydrojects! All five superintendents with Toro Hydrojects have a summer putting greens aerification schedule that calls for monthly or as needed treatments. The two extra golf courses listed in August always try to core aerify their putting greens right before their summer employees go back to school. The last schedule listed in Table 2 is for the three Toro Hydroject owners

who also use their machines in May and September.

One final comment about the results in Table 2. Hidden in the numbers is the fact that in the 1989 survey only two golf courses aerified their putting greens twice in a single season. In 1994, there are ten golf courses that plan on core aerifying their putting greens twice. In addition, all seven Toro Hydroject owners will be using their machines to make multiple aerifications of their putting greens. And finally, there is one superintendent that Verti-Drains in the Spring and uses conventional core aerification in the Fall.

The final comparison between the 1989 and 1994 surveys is summarized in Table 3. The results show that 1/2" tines are still the favorite for core aerification of putting greens. Note that two golf courses listed in the 1994 1/2" tine category use 1/2" solid tines mounted on the Verti-Drain. The increase in the use of 1/4" quadra tines is due mainly to the desire of superintendents to overseed bentgrass into small, shallow aerifier holes. In the 3/4" tine category, all three golf courses use the solid 3/4" tine with the Verti-Drain.

Before I move on, I feel it is necessary to expand a little on the use of the Toro Hydroject and the Verti-Drain. These two machines seem to be changing the way many superintendents approach putting green aerification (do I detect a couple of Band-wagons?), so I think some further comments are prudent.

In the case of Toro's Hydroject, three owners are planning to entirely eliminate core aerification of putting greens unless it becomes absolutely necessary. Two other users have plans to core aerify their putting greens in either Spring or Fall in addi-

TABLE 4

**Top Dressing Material Used to Fill Putting Green Aerification Holes in the 1994 Wisconsin Survey**

Material	No. of Golf Courses
80-10-10 Mix	1
80-20 Mix	9
Badger Mining BB7	1
USGA Spec Sand	7
Lakeshore TDS 2150	9
Waupaca Sand	2

tion to their use of the Hydroject. Still another superintendent plans to use the Hydroject all season long (May-September) and supplement those treatments by using the Coremaster equipped with  $\frac{1}{4}$ " quadra tines. The final member of the "Hydroject Club" has a long-range contingency plan that calls for core aerification of the putting greens every three years.

Does the Toro Hydroject really work? Judging from the responses of the seven superintendents in this survey, the Hydroject appears to be doing a good job. Can it eliminate core aerification of putting green? I think you need a crystal ball to answer that question.

Now let's take a look at the Verti-Drain. I'll admit that I harbor a bit of prejudice on this subject because I have used the Verti-Drain for the past two years on my putting greens and have been very happy with the results. I use  $\frac{1}{2}$ " solid tines; but three of my braver colleagues prefer to use the  $\frac{3}{4}$ " solid tine. One of the superintendents that uses the larger solid tines also core aerifies his putting greens in the Fall. The other two golf courses that use a Verti-Drain rely on it to alleviate drainage problems in their poorest putting greens. Now the two important questions. Does the Verti-Drain work? I think that both my own experience and the results of the survey yield a definite yes. Will use of the Verti-Drain eliminate the need for conventional core aerification of putting greens? I think I'll give that one a definite *maybe*.

The treatment of aerifier cores among the survey respondents is fairly straightforward. Twenty-three superintendents remove the cores entirely and only two chop and drag the existing soil mix back into the aerifier holes. Note that the two golf courses that recycle their cores have a very high sand content in their soil mixes. The three golf courses that use the Toro

Hydroject along with the four Verti-Drain users did not generate any aerifier cores.

The summary of the top dressing material used to fill the aerifier holes at the twenty-four golf courses that fill their aerifier holes with top dressing and at the four golf courses that fill their Verti-Drain holes with top dressing is shown in Table 4. Straight sand wins out over the sand-based mixes by nineteen to ten. Among the sands, Lakeshore TDS 2150 is the clear favorite.

The correlation of fertilization to putting green aerification in the survey is as follows: Twenty golf courses fertilize prior to aerification (one-two weeks prior is typical), seven golf courses fertilize during aerification (their goal is to get the fertilize into the aerify holes), and five golf courses do not fertilize in conjunction with aerification. It comes as no surprise that the five golf courses that do not fertilize in conjunction with aerification are the ones using the Toro Hydroject; with such little disruption of the putting surface, there is no need to fertilize the turfgrass to encourage it to grow over the aerifier holes. The types of fertilizers used range from commercially available "Greens Fertilizers" and "Starter Fertilizers" to personalized mixes that might include Milorganite, potassium sulfate and monoammonium phosphate. The rate of nitrogen applied varied from 0.25-1.00 pounds of nitrogen per thousand square feet. One additional note on fertilizer, four superintendents apply a granular wetting agent in conjunction with aerification in order to get it down into the aerifier holes.

On the question of overseeding, twenty-six out of a possible thirty-two superintendents responded that they overseed bentgrass during putting green aerification. Among those twenty-six superintendents, the choice between a Spring or Fall overseeding was equally divided. The twelve superintendents that specified their choice of bentgrass for overseeding putting greens were equally divided among PennCross, PennLinks, Putter and SR 1020.

In paging back through the 1989 survey, I found that there was almost a unanimous opinion among the superintendents at that time that overseeding bentgrass during putting green aerification was a waste of time and money unless the green was substantially damaged by winterkill or dis-

ease. How attitudes have changed! Either we all must have found a great new way to get overseeded bentgrass to succeed in putting greens or we are all desperate to introduce some "new blood" into our putting greens. I have a hunch that it is the latter.

The final survey question on the aerification of putting greens deals with what I like to call a "Wish List". In other words, what would it take to make the task of putting green aerification more successful at your golf course? It should come as no great shock that most superintendents responded with requests for more and

(Continued on page 25)

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TABLE 5

### Scheduling of Tee Aerification in the 1994 Wisconsin Surveys

Aerifications per Season	Month of Aerification <sup>1</sup>	
One 16	April	3
Two 14	May	9
Three 1	June	10
More than Three 1	July	1
	August	2
	September	15
	October	4

Values indicate number of golf courses in each category.

<sup>1</sup>Golf courses may be listed more than once in each year.

(Continued from page 23)

better equipment. What follows is a listing of the type of equipment that superintendents would like to have along with the number of superintendents making that request: Verti-Drain (9), Toro Hydroject (7), Quadra tine capabilities (3), better aerification machines in general (8), and more equipment to speed up the job (8).

Once again we see that the Verti-Drain and Toro's Hydroject are becoming very popular. Additional requests by the superintendents were for better overseeding techniques, better techniques for filling aerifier holes and being able to aerify putting greens when it is agronomically beneficial rather than when it is the least offensive to golfers.

Earlier in this article, I stated that it was likely that techniques used in putting green aerification would probably show up in our discussion of tee aerification. Looking through the survey responses, it appears that thirteen of the superintendents manage their tees exactly like their putting greens when it comes to aerification. That said, I'm going to continue this discussion of tee aerification without any further references to putting green aerification.

The summary for the scheduling of tee aerification is found in Table 5. Superintendents were pretty evenly divided between one (sixteen) and two (thirteen) tee aerifications per season. One ambitious superintendent schedules three tee aerifications per season. The one entry in the more than three tee aerifications per season belongs to the single Toro Hydroject user. The most popular time of the year to aerify the tees is a toss up between Spring (May and June) and Fall (September and October). The golf courses that aerified only once per season were also equally divided be-

tween and Spring and Fall. Many superintendents stated that the scheduling of tee aerification was not a major issue because it can be managed to limit its impact on golfers. In my case, I sometimes stretch out the tee aerification process on my twenty-seven holes for up to two weeks depending on the weather and the amount of play.

Table 6 shows us that the choice of machines for tee aerification is fairly even between Ryan (fifteen) and Toro (twelve). Four superintendents make short work of their tee aerification by using the Ryan GA-60. And finally, the sizes of the tines used in tee aerification seem to indicate that bigger aerifier holes equal healthier tees.

For core treatment after tee aerification, eighteen superintendents chopped the cores and dragged them back into the aerifier holes and fourteen superintendents removed the cores. On those fourteen golf courses where the aerifier cores were removed, the choice of soil amendment to fill the aerifier holes was evenly split between pure sand (seven) and an 80/20 mixture (seven).

For fertilization in conjunction with tee aerification, seventeen superintendents fertilized before aerification, seven during aerification and eight did not fertilize based on the tee aerification schedule. The types of fertilizer used covered a broad spectrum: from organic, slow release nitrogen sources to water soluble, quick release nitrogen sources. The rate of nitrogen varied from 0.25-1.00 pound of nitrogen per one thousand square feet.

The seed of choice for overseeding during tee aerification was PennCross by a landslide. Timing of the overseeding slightly favored Fall (fourteen) over Spring (ten) with eight superintendents choosing not to overseed in conjunction with tee aerification.

The "Wish List" for tee aerification included the following requests along with the number of superintendents making the request: Aerify more often (6), Verti-Drain (5), and Toro Hydroject (3). The shortness of this list seems to reinforce my earlier comments that portrayed tee aerification as something far less than a situation that would call for "Roloids".

"Do you really have to do this to the fairways?" That was the comment of one of my members after he had just finished playing through three fairways that were in the dusty cleanup stages following aerification. Naturally I said

TABLE 6

### Tee Aerification Machines and Tines Used in the 1994 Wisconsin Surveys

Machine		Tine Size	
CoreMaster	2	1/2"	15
Jacobsen AeroKing	1	5/8"	14
Ryan Greensaire	15	3/4"	6
Ryan GA-60	4		
Terra 200	1		
Toro Greens Aerator	12		
Toro Hydroject	1		

Values indicate number of golf courses in each category.

Golf courses may be listed more than once in each year.

yes, and then proceeded to remind him that I had announced the fairway aerification well in advance in committee meetings, on bulletin boards and in the monthly newsletter. He walked away, still a bit miffed and very dusty. I'm convinced that a scene similar to this is being played out at most golf courses in Wisconsin at some time during the course of the year. Why? Because superintendents have found that one of the best ways to meet the growing demands placed on their fairway turfgrasses (both *Poa annua* and bentgrass) is aggressive aerification. Let's cut to the survey and see if I'm right.

How often do you aerify fairways? In the survey, nineteen superintendents did it once a year and the remaining thirteen superintendents did it twice a year. For the nineteen golf courses aerifying fairways once a year, four prefer a Spring schedule and fifteen accomplished the task in the Fall. For the golf courses aerifying fairways twice a year, the scheduling was usually set for early May and mid-late September. Once again, we see the in-

TABLE 7

### Fairway Aerification Machines and Tines Used in the 1994 Wisconsin Surveys

Machine		Tine Size	
CoreMaster	2	1/2"	8
Jacobsen AeroKing	1	5/8"	14
Rogers 590	1	3/4"	13
Ryan GA-30	1		
Ryan GA-60	12		
Ryan Greensaire	2		
Ryan Renuvaire	3		
Terra 200 or 320	4		
Toro Fairway Aerator	2		
Toro Greens Aerator	5		
Toro Hydroject	1		
West Point	6		

Values indicate number of golf courses in each category.

Golf courses may be listed more than once in each year.

evitable consequences of sharing our golf courses with the golfers as our fairway aerification programs are squeezed to both ends of the golf season.

Looking at the numbers in Table 7, the Ryan GA-60 stands above the crowd in popularity. Based on my own experience, I can assure you that the GA-60 merits that popularity. I purchased a GA-60 two years ago and can best describe it as an awesome machine. During those two years it has performed without a hitch and has significantly improved my fairways. The survey comments of the eleven other superintendents that own GA-60s were similar to mine.

To amplify the popularity of the GA-60, I'm going to jump ahead in the fairway aerification discussion and cover the "Wish List". Twelve superintendents indicated that the GA-60 would be their choice for fairway aerification. Other requests along with the number of superintendents making the request are as follows: Aerify in June (5), aerify more often (5), Verti-Drain (4), Toro Hydroject (3), overseed with bentgrass (5) and top dress (1).

Before we leave Table 7, let's take a quick look at the tine size summary where the trend is definitely towards the larger tines. Many superintendents made the comment that the main purpose of their fairway aerification program was to bring as much soil to the surface as possible in order to control the thatch brought on by their light-weight mowing programs.

The solution for fairway aerification cores is solved two ways in the survey. Twelve superintendents chop up the cores using a machine such as a Jacobsen Turfcut with an outfront flail mower and then drag the chopped cores into the fairway. The remaining twenty superintendents use some type of drag mat to both break up and drag in the cores. Eight golf courses have enough debris remaining following the

dragging that a blower must be used to clean off the fairways.

The soil amendment or top dressing discussion for fairway aerification is understandably brief. None of the golf courses in the survey are currently top dressing their fairways. If you include approaches in this discussion, there are three superintendents top dressing their approaches with pure sand and another two that are using an 80/20 mixture.

How many golf courses are trying to improve their fairways through overseeding at the time of aerification? Six superintendents are overseeding all of their fairways, eight are spot seeding and eighteen do not overseed at all. Among the fourteen overseeders, the seed of choice was a toss up between PennCross and PennEagle.

The decision on whether to fertilize in conjunction with fairway aerification split the survey results right down the middle. The half that responded affirmative usually fertilize one-two weeks prior to aerification. The types of fertilizer used and the rates of nitrogen applied were not specified by enough of the superintendents to justify any discussion.

Before we leave fairway aerification, I'd like to share some interesting comments on earthworms. One superintendent explained how the intense earthworm activity on his golf course was his primary source of fairway aerification. A second superintendent stated that he did not machine aerify several of his fairways due to the active earthworm population. Now mind you, I have nothing against earthworms, and I know that earthworms are great friends of the soil, it's just that sometimes they can make quite a mess out of my fairways!

After all that aerification, do we still have time for the roughs? For seven of the superintendents in this survey, the answer is NO; they just don't have

the time, the employees and/or the equipment to tackle such a large scale project. Another eleven golf courses aerify the wear areas in their roughs. This typically occurs in the Fall and is accomplished with a variety of machines (fitted with 1/2-3/4" tines) and is usually accompanied by fertilization and overseeding.

That leaves fourteen golf courses that aerify their roughs "Wall to Wall". In this group, eleven aerify in the Fall, one in the Spring and one all season long. The machines used tend to be low-tech, like the West Point (seven golf courses), but the Ryan GA-60 is used by three superintendents and Toro Greens Aerators are used at two golf courses. Aerifier cores are dragged in by ten superintendents, chopped and then dragged in at three golf courses and just left alone on the remaining golf course. Overseeding in

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the wear areas with blends of blue-grasses and rye grasses is practiced by six superintendents. And finally, six superintendents (not necessarily the same ones who overseed) plan the fertilization of their roughs to coincide with aerification.

For a rough aerification "Wish List", the most popular request (ten superintendents) was for more time to do the job. Other requests along with the number of superintendents that made the request include: Better machines (6), Ryan GA-60 (4), Verti-Drain (2) and Aerway (1).

OK, now what have we learned about aerification? Well first off, we

should have all been reminded just how important all those aerifier holes really are! Whether they are little or big holes, they provide the life line for our turfgrass plants during times of stress. Secondly, we must continue to both beg and bully our golfers into allowing us to aerify when it is agronomically beneficial to the turfgrass plant rather than convenient for the golfers. And finally, even if nothing else has been accomplished by this article, it will provide us with an "Aerification Benchmark" from which we can compare today's aerification techniques with those of both yesterday and tomorrow. 🌱

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# DALLAS CONFERENCE MERITS "AVERAGE" MARKS

By Monroe S. Miller and Chad D. Eberhardt

It was an on-time, comfortable, even flawless flight from Madison to Dallas. The excitement of attending the annual GCSAA conference is something that remains with me, despite having gone through that gate 21 consecutive times before. The smooth trip seemed a good omen for the 1994 program.

Luck changed shortly after I was in a cab riding from the airport to the hotel GCSAA assigned me.

"Where y'all headin'?" the driver asked me in a drawl that made Jim Latham sound like he'd been a Badger his entire life.

"Dallas Grand," I replied. There was a long silence which quickly raised my suspicion.

Finally a reply came. "What y'all stayin' there for Pardner?"

It was a good question, one that ground on my nerves the entire time I was in Dallas. More on that later.

Declaring an event "average" means that some aspects were better than previous years, some things were worse and some were, well...average. Not good. Not bad. Just plain average. Here is a sketch of two individual opinions and impressions.

## EXCELLENT

1. The Dallas Convention Center is not new or fancy or attractive. But it is big, functional and complete. Especially appreciated by me was a show floor open one end to the other, a much better arrangement than having machinery shown in several different rooms. The classrooms were really good, and the theater was an excellent venue for several presentations I attended there.

2. The Sixth Floor of the Texas School Book Depository. People about my age and older can almost always tell you

where they were and what they were doing on November 22, 1963 at about 12:30 p.m. The one thing Dallas most likely will always be known for is the Kennedy assassination. Although nothing to be proud of, Dallas has done an excellent job of presenting and preserving the sixth floor of the Texas Book Depository, the grassy knoll, and the surrounding area of Commercial, Main and Elm and Houston streets. The events of the sad day are well presented, as are the details of the subsequent investigations. It was quite a moving experience for me, and all others who visit the historical site, regardless of feelings about Kennedy's presidency or personal conduct. The Dallas City Hall where Jack Ruby shot Lee Harvey Oswald was across the street from our hotel.

3. The Environmental General Session with Dr. Burt Kross found an attentive (worried?) albeit small audience present to hear the preliminary results of the GCSAA pesticide exposure study. Why is it so few manage to attend a meeting so important? It was embarrassing, again, like last year. I mean, this issue is a matter of life and death, literally.

I took several things away from Dr. Kross' lecture, some of them troubling:

a. golf course superintendents (based on a group that died between 1970 and 1992) had higher rates of cancer overall than the general population.

b. incidence of lung cancer in that group was higher than in the general population.

c. the same was true for non-Hodgkin's and large intestine cancer.

d. brain cancer incidence was also higher.

e. prostate cancer was higher, but linked to possible machinery operation.

f. RESULTS DO NOT APPLY TO PLAYERS because of exceedingly low exposure rates.

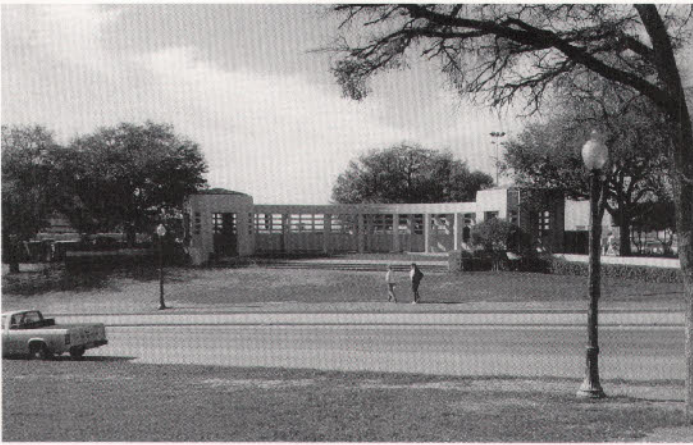


Lee Harvey Oswald fired the shot that killed John Kennedy from the second from the top—sixth floor—window on right side of Texas Book Depository as you see it here.



Dallas City Hall building where Jack Ruby killed Lee Harvey Oswald.





The grass knoll today looks just like it did in 1963.

Clearly we must follow Kross' advice to expand the breadth of this study and continue it until we really know what is happening.

4. Equipment show is always excellent, and it was again this year. How could it be otherwise?

5. The weather was between ten and fifteen degrees above normal. 76°F. Sunny. Warm. No rain. Need I say more?

#### ABOVE AVERAGE

1. Selection of Byron Nelson as the 1994 Old Tom Morris Award recipient. I had a chance to visit with him at the Bentgrass Research Inc. breakfast, and he is a real gracious and grand gentleman. He was happy to give his autograph to any who wanted it.

2. Opening Session was pretty good. It was a fairly short and to-the-point affair this year, the way it should be. It is amazing how quickly things can move if you cut out the boasting, self-promotion and hot air. Zig Ziglar was no Terry Bradshaw or Bart Starr, but he was better than nearly anyone else I can recall. Good choice.

3. Dallas skyline at night is beautiful, if viewed from a safe setting.

4. Banquet and show were really good. The food was great, if you ate a big meal just before attending. The head table presentations were shorter than in many years past, and that is wonderfully good news. Byron Nelson was super, including his comment after reading a letter from Bill Clinton—"maybe if he keeps writing like that I might think 'bout voting for him someday." Crystal Gayle is a first class entertainer and gave a very good "banquet" performance. The Oak Ridge Boys were especially good at keeping the crowd involved throughout. Both mixed their music well, suiting even those who do not like hillbilly music. Overall, it was an enjoyable four hours.

#### AVERAGE

1. Education program had a few highlights, a few lowlights and a whole lot between. Since it is impossible to attend everything offered, I had to rely on friends for additional input. Same thing—average to mediocre overall although some lectures were excellent. I won't embarrass the bad lectures, although I should so they aren't invited back. But here were a few of the really good ones—Frank Rossi, Randy Kane, Bruce Clark, Bruce Branham, Randy Witt and Jim Beard (although he had little new data compared to last year).

2. Convention Center Chow was better than some places we've been and worse than others. Prices were gross as always.



Welcome sign from the huge Dallas Convention Center.

3. Here is a radical proposal: since the best part of the USGA Green Section Conference is always those parts presented by the agronomists, maybe Jim Snow and the rest of the staff should, some year, feature only these guys. Forget the obligatory talk by the GCSAA president, the PGA Tour player, and everybody else. They nearly always drag the program down. A half day with the best and most practical golf turf agronomists in the world would be tough to beat. We'd be relieved. And I think it would get the program back up into the EXCEPTIONAL category. The one exception I'd make would be the inclusion of a speaker KNOWN to be good and relevant.

#### BELOW AVERAGE

1. Some of the specific topics selected were absolutely foolish. Who in the world could care about a bunch of the subjects covered escapes me. I won't be specific. These were obviously excuses for some people to appear on the program, for whatever dumb reason. Politics maybe? Resume building? Poor reasons, whatever they were.

2. Shuttle service was poor. Took too long. Biggest hotels were often at the end of some routes and buses were nearly full when they arrived. Lots of griping about the shuttle service, and it was justified. How long and how much experience does it take to get simple things like this ironed out? Two lifetimes?

3. Dallas may be a good business city, but it isn't anything great for visitors. Spouses, too often, had nothing to do. And when locals tell you "don't even think about walking anywhere after 5 p.m.," you know this is a place you'd rather not be in. Hopefully the first time will be the last time.

*(Continued on page 30)*

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## UNACCEPTABLE

1. Hotel selected for some members (including me) was irresponsible. There is no reason to include a dirty, poorly maintained facility on the list of hotels GCSAA assigns members to stay in. Not only were several of them fleabags, they were located in areas patently unsafe. Good God—some members had their kids with them. One hotel was located in the middle of what one resident said was the “meanest one block area downtown.”

I have a plan for next year. An officer or director of the GCSAA should be assigned to stay in every hotel a member might be assigned to stay in. That would put an end to closed eye choices. I can promise that the dump given me would not house an officer or director or staff member.

With a staff of 75 in Lawrence, it should not be too tough to scout the facilities in the host city, figure out the acceptable and unacceptable housing locations, and then put an elected board member in each.

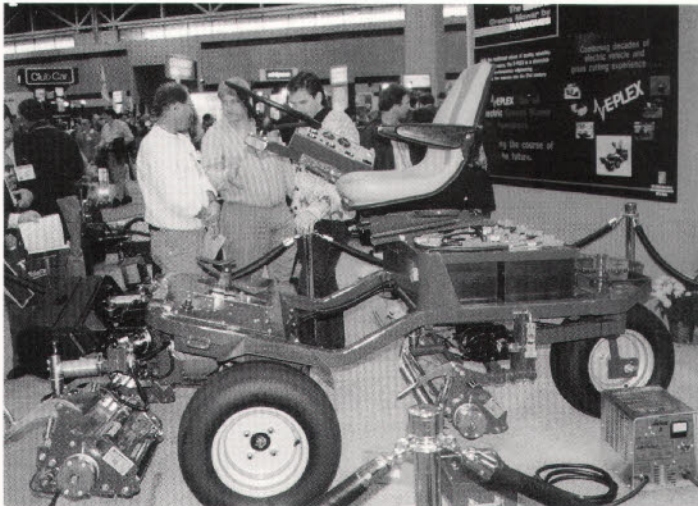
This hotel furor only amplifies the feeling some members have that too many GCSAA leaders are totally out of touch. And again, no O/D or staff were seen in any but the best and most expensive. Members feel, “if its good enough for me, it ought to be good enough for you.”

## OF WORTHY NOTE

1. TWO new electric greens mowers were unveiled—Ransomes and Jacobsen. They shocked the turf world by showing the latest technology. Who knows—the days of hydraulic oil leaks from triplex greens mowers may soon be over.

2. Less talk about green rollers than I expected. I’m thinking some common sense is rising to the top here. Maybe these machines are destined for the back corner of the cold storage building, seldom to be seen again.

3. Rubberneck report: In addition to Byron Nelson, I also had a chance to meet Ben Crenshaw.



Side view of the Ransomes electric greens mower shows the simplicity offered by such a power plant.



Evidence that we were meeting down South in Dixie!

4. More and more bio controls are becoming available.

5. The environment and environmental responsibility as the two relate to golf are clearly more than a trend, as the case should be.

6. Best quote I read about Texas is attributed to General Philip Sheridan back in August of 1866 when he rode across the state on a horse: “If I owned Texas and all hell, I would rent out Texas and live in hell.”

7. Jim and Lois Latham are really going to retire and they own a lot near Whitley, Texas. It is only 15 minutes from Jim’s hometown of Hillsboro. Fitting that his last “official” GCSAA conference was in his home state.

8. I drove past the home of the Dallas Cowboys in Irving on the way to Dallas. Underwhelming; pales in comparison to Lambeau Field. It really does look like they forgot to finish the structure—no roof over the field! 🙄



Hot item—Jacobsen’s new Electric Greens King.

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