MAY, 1965
VOL. 18, NO. 11

The Bull Sheet

Official Bulletin
Midwest Association of Golf Course Superintendents

HEAR
DR. JACK BUTLER
ON
WEED
ERADICATION
IN
FAIRWAYS

MAY MEETING
HICKORY HILLS COUNTRY CLUB
TUESDAY, MAY 4, 1965

GOLF — DINNER
EDUCATIONAL PROGRAM
BUSINESS MEETING

THE BULL SHEET, official publication of THE MIDWEST ASSOCIATION OF GOLF COURSE SUPERINTENDENTS.

TED WOEHRLE, Editor
8700 So. Western Ave.
Chicago 20, Illinois

The President's Message

Weather, the superintendent's dilemma.

A year ago April, by some coincidence, our meeting was again held at Sportsman Country Club and the talk was dry weather, superintendents turning on water with snapped valves, heaved pipe and an extreme need for water. This year, who needs water yet?

This is one of those extreme years when golfers are ready but are we?

I can't help but think that most of us as Superintendents are well off that we don't have rivers running through our course on top of tree damage from ice, late season, exceptionally wet and a need for about a hundred men one of these days. Those with rivers and streams, I hope for better days ahead.

During the past few years, we have been going from one extreme to another, so be prepared with that water system because the last of April and the first of May could be a different story.

The officers and directors sincerely appreciate the fine attendance at our meetings the last couple of years. We seem to be growing in attendance for some time and we appreciate the fine effort of the Arrangement Committee and sincere appreciation to the managers and their staffs where meetings are held for their fine support of our association.

Al Johnson, President

OOPS

In listing the Past Presidents of the Midwest Association of Golf Course Superintendents in last month's issue we inadvertently forgot to list the President of 1936. He happens to be one of our most active members, and we are certainly sorry for this error. None other than Frank Dinelli was president that year. 1936 was a big year for our Association and we certainly are thankful for such members as Frank.

NEXT MEETING

The May meeting will be held at Hickory Hills Country Club on May 4, 1965. Director, Ed Braunsky will be our Host for the day. This will be the first Golf Outing of the season, weather permitting. Dinner will be served in the newly constructed Four Seasons Banquet Room. This is one of the most beautiful dining rooms in the Chicago Area.

Dudley Smith has arranged to have Dr. Jack Butler of the University of Illinois to appear on our Educational Program to discuss weed eradication for fairways.

APRIL MEETING

The April Meeting of the Midwest Association of Golf Course Superintendents was held at the Sportsman Country Club. After a delicious dinner we heard from R. Paul Kohler of the Brookside Laboratories, New Knoxville, Ohio. He presented a program discussion dealing with soil testing and its benefits. One comment that stuck in my mind, "Plant life comes from the soils" — we forget this — most of our budget as far as materials are concerned deal with curing troubles, which are usually related to soils, rather than spending money to prevent troubles through good soil testing. One may even have his topdressing and irrigation water analyzed. These two items can change soil reaction over a period of time.

More Past Presidents Honored

President Al Johnson passed out six more Past President Pins at our April meeting during a short ceremony. Past Presidents honored were Frank Dinelli, 1936; George Roloff, 1954; Ray Davis, 1953; Bill Stupple, 1950-51; Bob Williams, 1956 and Amos Lapp, 1957.

BOWLING CHAMPS

After the Educational program at our last meeting Chairman of the Committee, Ed Braunsky and his assistant Howard Baerwald passed out prizes to the members participating in the Bowling Championship.

There were 23 members participating in the event with the following results:

High Game — Dan Taggert
High Series — Don Theesfield
2nd High Game — George Weidner
2nd High Series — Gary Bayer
3rd High Game — Ron Rosset
3rd High Series — Jim Holmes
4th High Game — Dale Habenicht
4th High Series — Dick Trevarthan
Low Game — Bill Brady
Low Series — John Karley
Most Open Frames — John Ebel
Most Strikes — Bob Winter

Ed Braunsky — Host of May Meeting
Co-chairman of the Golf Committee

UNIVERSITY OF ILLINOIS FINISHES FIRST WINTER COURSE FOR TURF STUDENTS

On March 12, 1965 the first group of winter students finished their six weeks in turf management. In all 21 students completed their studies. The average age for the class was somewhere around 40 years of age. This proves a point which many of us have stressed for quite some time, we should afford our Superintendents some type of education other than a complete four year course in turf management. So many men never had the opportunity to complete their education to the degree that they desired because of the WW 2, financial reasons, home responsibility and other reasons. This is an opportunity to obtain a generally formal and technical education in a relatively short period of time. There are enough courses available for an interested person to attend for two winters.

Some of the courses available are: Surveying and Drainage, Farm Welding, Farm Arithmetic, Soil Management, Landscaping Recreation Areas, Arboriculture, Turfgrass Management, Agronomy, Business English.

Notes

The tentative date for the annual fall clinic was announced at the last meeting by Gerald Dearie, Chairman of the Educational Committee as the 3rd week of November. Other dates to remember are:

ILLINOIS TURFGRASS FIELD DAY — September 10 and 13, 1965.
ILLINOIS TURFGRASS CONFERENCE — December 2 - 3, 1965.
ILLINOIS TURF AND PARK MANAGEMENT SHORT COURSE — January 31 - March 11, 1966.
PURDUE FIELD DAY — August 16 and 17, 1965.

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Walter Fuchs, Chairman of the entertainment Committee is still looking for a location to hold our Annual Fall Dinner Dance. He is trying to get a Club that is centrally located.

Roy Hanneman, Superintendent of Glenview Park Golf Club, informs us that they have just completed a new Clubhouse. Roy used to be at the Evanston Country Club before moving to the Glenview Park Golf Club.

How about someone coming up with a Compatability Chart for Golf Courses? — and a chart for disease controls? With so many varying recommendations from the Universities we find it difficult to decide which one cure is the best. Ted Woehrle informs us that the Illinois Turfgrass Foundation is working on these two items for release in the near future.

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CHICAGOLAND GOLF ASSOCIATION HOLDS MEETING

On Tuesday, April 13, 1965, the Chicagoland Golf Association held a meeting at the Mohawk Country Club to discuss the pros and cons of Fairway Irrigation. Jim Latham of the Milwaukee Sewerage defended fairway irrigation for public fee courses, and Jim Holmes was arguing against irrigation of Bluegrass fairways. Ted Woehrle summarized the program.

Some of the points brought out in the debate: Several things to be considered before making up your mind to irrigate presently unwatered Bluegrass Fairways are — Supply of Water and Electricity, Soil make-up, Drainage, How much will the installation cost and how much will it cost in additional maintenance. They both felt that if one decides to irrigate he should consider automatic irrigation. Additional labor is necessary for more frequent mowing, more fertilizer will be required, additional fungicide applications will be necessary.

John Coghill was Chairman of the program and he presented figures of a recent installation and the group discussed the financing of this operation. The general feeling was that it is questionable whether watered fairways would benefit the cash register. Most courses are already crowded to capacity. Perhaps all courses will eventually become watered, but for the immediate future most would be better off to postpone an installation.

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NEWS

Roger Brown of IMC has recently been elevated to the position of Lawn and Garden Coordinator for the Chicago area. His replacement has not been announced as yet. Dick Hedberg has also been elevated to a new position. Good Luck to two old friends of the Superintendent.

GCSAA Booth at Chicago Golf Show

Why Insist That Engineers Seal Plans

The Illinois Professional Engineering Act requires all registered engineers to obtain a seal showing their name and registration number. They must stamp with their seal all plans, drawings and specifications prepared by them or prepared under their supervision.

The following are some of the reasons for the above requirement.

AN ENGINEER'S SEAL ON PLANS . . .

1. . . . is a symbol of competency, for to use such a seal a man must be qualified through examination and registration.
2. . . . pinpoints responsibility and tells the client who actually was responsible for the design.
3. . . . gives stability, quality and authority to plans and drawings.
4. . . . seeks to protect public health, safety and welfare.
5. . . . provides legal record, long after the project is completed one can look back at original plans and determine the person responsible.
6. . . . makes it difficult for unregistered persons to falsely claim engineering capability.
7. . . .establishes a criteria, for persons without seals have probably not passed their registration examinations.
8. . . . lends dignity to the engineering profession.

FROM THE

ASSOCIATED ARBORISTS OF ILLINOIS

Although it is still winter, spring, with its annual crop of itinerant, unlicensed and unscrupulous tree racketeers will soon be upon us.

The Associated Arborists of Illinois, for many years has attempted to discourage this type of operator. Flagrant cases of malpractice and swindling have been **repeatedly** reported to the Department of Education and Registration to the local authorities. But still these gyp artists appear every spring to fleece more unsuspecting citizens.

The Department is charged with enforcing the Illinois Tree Expert Law, which was passed to protect the public from these predators. Most tree men licensed under this Act have passed a rigid State examination. To diagnose and treat trees without a license is to break a state law.

Since the Department has been unable to effectively control these violators and local authorities have had but little more success, the Associated Arborists are appealing directly to you, to use your influence in exposing and eliminating these parasites.

What can you do?

Acquaint your public with the following signals:

No Illinois Tree Expert License.
No membership in trade organizations.
No permanent address.
Door bell ringing.
Wild promises — "cures", "secret treatments" and **Hard Sell.**

The more adverse publicity these racketeers receive, the better.

Call the Department of Education and Registration and alert local law enforcement agencies. Notify local foresters and reputable tree care concerns of all cases of malpractice and over-charging you may discover.

With mutual cooperation we can protect the public from these tree vermin. Please let us know if we can help you.

Very truly yours,
ASSOCIATED ARBORISTS OF ILLINOIS

Editor's Note — Please help in this effort to stop Tree Killers.

Mr. Ted Woehrle, Editor
8700 S. Western Ave.,
Chicago 20, Illinois

Dear Sir:

Recent editorials and discussions of turf problems have concerned with water amounts for irrigation and soil drainage. Fundamentally, it is the quality of the water used, that influences these factors. With ninety percent of a grass plant being water, the ability for ready absorption of soil moisture is a prime requisite to plant survival and growth rate. The kind and amounts of dissolved minerals, termed soluble salts, contained in the irrigation water can restrict grass moisture absorption and cause cemented hardpans that limit water infiltration of soils.

With twenty years experience in analysis of well waters used for commercial greenhouse irrigations, our laboratory has found the amounts of soluble salts to be presently double what they were ten years ago. All waters vary in amounts of dissolved mineral salts according to the very location of the well. One thing is common to all waters of this region, all contain amounts of carbon dioxide, which effects the dissolved minerals adversely, by combining to form carbonates of the water contained minerals. Carbonates are insoluble and so accumulate as residues in the soil. Each watering adds to the amount and it is this degree of increase that should be concerned for suitability and management of the irrigation water. The statement is made, even with the best of irrigation waters, by the time of the twelfth watering a soluble salts problem exists.

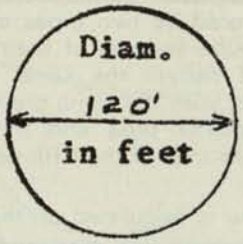
Grasses vary in tolerance to soluble salts amounts. Retarding of growth rate is evident with other symptoms at amounts of 350 parts per million of soil extract solution, of all dissolved minerals contained. Research has determined the upper tolerance levels for certain grasses based on sodium carbonate. Soil analysis for sodium absorption ratio figure determines the plant loss figure. These are: Kentucky Blue Grass and Poa Annua "2" — Red Top, Fescue (Chewings), Highland and Astoria Bent "4" — Alta Fescue "6" — Seaside Bent "10". When grasses fail in this order as the watering season progresses, it can be assumed that soluble salts have accumulated beyond the tolerance of that particular grass type.

Only by amendment of the irrigation water can the carbonate "hardness" elements be made mobile in the soil profile and so drain away. Not by salt softeners which would be harmful or surface applications of such as sulphur or gypsum which could complicate the problem of soluble salt residue.

Any interested golf course superintendent can learn of the variation in amounts of soluble salts contained in well waters of municipalities of this state at no charge. Write for "Circular 90, Mineral Content of Public Ground Water Supplies in Illinois", by T. E. Larson. Address to Deparment of Registration and Education, Illinois State Water Survey, Urbana, Illinois. Although all water qualities differ according to actual well location this is a most informative book.

As water for irrigation is a subject of many factors, the writer welcomes any questions on the subject and can offer program for water improvement.

Sincerely yours,
(Signed) Art Smith

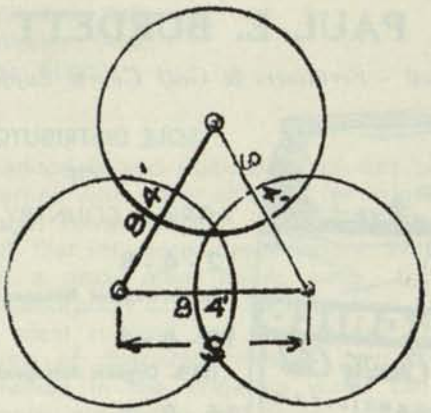


Formula for finding the precipitation in inches per hour from any sprinkler when discharge in gallons per minute and coverage in feet is known.

$$\text{Precipitation in inches per hour} = \frac{122 \times \text{g.p.m.}}{\text{Diam. squared}}$$

EXAMPLE: If a sprinkler discharges 25 g.p.m. and covers a circular area of 120 ft. in diameter the precipitation is

$$\frac{122 \times 25}{120 \times 120} = 0.21 \text{ inches per hour}$$



Formula for finding the precipitation in inches per hour from identical sprinklers located in an equalateral spacing when the discharge from any one sprinkler and distance between sprinklers in feet is known.

The precipitation in inches per hour within the triangle is: $\frac{111 \times \text{g.p.m.}}{\text{S in feet squared}}$

EXAMPLE: If each of the above sprinklers discharges 25 g.p.m. and they are spaced 96 feet apart in an equalateral position the precipitation in inches per hour **within the triangle is:**

$$\frac{111 \times 25}{96 \times 96} = 0.30 \text{ inches per hour}$$

It is frequently desired to know what number of pipes of a given size are equal in carrying capacity to one pipe of a larger size. At the same velocity of flow the volume delivered by two pipes of different sizes is proportional to the squares of their diameters; thus one 4" pipe will deliver the same volume as four 2" pipes; however, with the same pressure the velocity is less in the smaller pipe and the volume varies about as the square root of the fifth power of the pipe diameter.

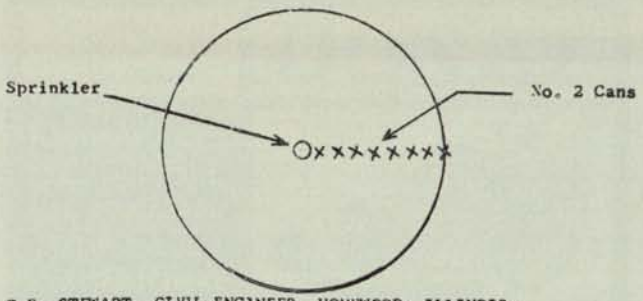
The table below is calculated on this basis.

The figures opposite the intersection of any two pipe sizes is the number of the smaller sized pipes required tto equal one of the larger sized pipe; thus one 4" pipe equals 32 one-inch pipes or 5.7 two-inch pipes or 2.1 three-inch pipes.

EQUATION OF PIPES

Diameter in inches	1"	2"	3"	4"	6"	8"
1"	1					
2"	5.7	1				
3"	15.6	2.8	1			
4"	32.0	5.7	2.1	1		
6"	88.2	15.6	5.7	2.8	1	
8"	181.0	32.0	11.7	5.7	2.1	1

NOTE: A one-inch hose will deliver slightly more water than two 3/4" hoses of the same length when connected in parallel.



C.E. STEWART, CIVIL ENGINEER, HOMEWOOD, ILLINOIS.

It has often been the desire of the golf course superintendent to obtain a cheap, easy, and accurate method for determining the exact precipitation of water in inches per hour from a sprinkler. The following suggested method fulfills this desire.

MATERIALS REQUIRED

a — A number of No. 2 cans, or any similar type of container which has a diameter of 3¼". No. 2 cans are commonly used at grocery stores to contain peas, beans, tomatoes, etc.

b — One glass or plastic cubic centimeter tube, this graduated cc tube costs about $1.00 and may be purchased at most drug stores or surgical supply stores.

METHOD TO EMPLOY

1. Place the sprinkler in its desired position.
2. Use as many of the No. 2 cans as are required to extend from the sprinkler in a straight line to the outer edge of the sprinkler coverage and at 2 to 5 feet intervals apart.
3. Set the sprinkler in operation and **RUN IT FOR EXACTLY 44 MINUTES.**
4. Shut off the sprinkler and pour the contents of any No. 2 can into the cc tube, a reading in centimeters will be obtained but each cubic centimeter will equal exactly 0.01 inches, or (1/100th inch) of sprinkler precipitation **PER HOUR.**

EXAMPLE

If a reading of 37 cubic centimeters is obtained from a can after the sprinkler has been running exactly **44 minutes** the sprinkler will, or the area where the can was located, precipitate 0.37 inches **per hour.**

By plotting the precipitation from each can on graph paper a true sprinkler precipitation curve may be obtained.

The above test should be conducted where there is water distortion by wind velocity as well as a test with NO WIND.

A SUGGESTED METHOD FOR COMPUTING PIPE SIZES FOR A GOLF COURSE IRRIGATION DISTRIBUTION SYSTEM

The selection of the correct size of pipe for a golf course water distribution system should be based on costs, i.e. the cost of the pipe, pipe fittings and all labor to install the pipe.

One example of how to arrive at the suitable size of pipe to use when the flow in g.p.m. and yearly operating time is known is given below.

EXAMPLE:

A pump is to supply water at a rate of 100 g.p.m. through a pipe line 1000 feet in length and it is as-

sumed that the "fire to water" efficiency of the pump is 70%, i.e. the output of the pump equals 70% of the electrical energy required to drive it.

	1 Size of pipe	2 Cost to instal 1000' of pipe	3 10% of pipe cost	4 Pipe friction in feet	5 KWH per year in pipe friction	6 Cost of power per year @ 1.5¢ per KWH	7 Total cost per year
	2"	$1150.00	$115.00	358	11586	$173.79	$288.79
	2½"	$1310.00	$131.00	120	3884	$ 58.26	$189.26
**	3"	$1630.00	$163.00	49.6	1605	$ 24.08	$187.08
	4"	$2550.00	$255.00	12.2	395	$ 5.93	$260.93

** From the above analysis it will be noted that the 3" pipe is the best size to use; further, it will be noted that 100 g.p.m. flowing through a 3" pipe has a velocity of 4.54 feet per second, this indicates that a suitable size of pipe can be used when the water velocity averages between 4 and 5 feet per second.

$$\text{Velocity} = \frac{\text{G.P.M} \times 0.408}{\text{D squared}}$$

D = pipe diameter in inches.

EXPLANATION

The figure in column 2 is the cost of the pipe, pipe fittings, trenching, pipe installation and backfilling and is based on current costs for this type of work in the Chicago area.

The 10% figure in column 3 represents the following:

1. An interest rate of 5% per year on the initial investment.

2. The life of the pipe is estimated at 25 years; consequently 4% of the initial investment must be layed away each year to replace the pipe in 25 years, this comes under the heading of depreciation.

3. Minor yearly repairs in the pipe for maintenance is estimated at 1% of initial investment.

Thus a total of 5 + 4 +1 percent, or 10% as shown in column 3 must be paid out, or layed aside, each year for the use of the pipe.

The pipe friction in column 4 is computed in the usual manner and is based on a friction factor of C – 100.

The horsepower required to drive the pump to overcome the pipe friction loss is computed and changed to kilowatt hours as shown in column 5. In this case the yearly use of the pipe is construed to be 120 days at 10 hours per day, or a total of 1200 hours per year; thus the figures in column 5 come from the following formula:

$$\text{KWH} = \frac{\text{G.P.M} \times \text{head in feet}}{3960} \times \frac{1}{0.70 \text{ efficiency}}$$

$$\times\ 0.746 \times 1200 \quad \text{which in reduced form is:}$$

$$\frac{\text{G.P.M.} \times \text{head in feet}}{3.09}$$

With power costs at 1½ cents per KWH the figures in column 6 follow. The total cost for the year for pipe and power is the sum of columns 3 and 6 which is shown in column 7.

All of the irrigation information submitted by C. E. Stewart, Civil Engineer, Homewood, Illinois