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

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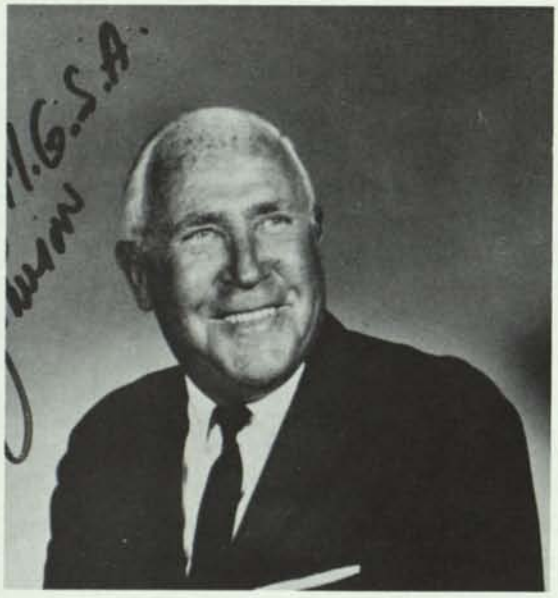

News of the passing of Norman C. Johnson has reached us from Fort Myers, Florida. The Midwest Association of Golf Course Superintendents join together to extend their sympathy to the family.

Mr. Johnson was the founder of the Bull Sheet and took a great part in the development of the MAGCS.

The Editor hopes that he will be able to honor Mr. Johnson to great extent in another issue.

The President's Message

As I sit here contemplating my message for the month, many thoughts of the past and dreams of the future of our association flashed through my mind. I have been a member of the Midwest since 1946 and have met many wonderful men, I probably would never have met otherwise. And now as your president I hope that these are unselfish dreams which wish for us not that which will reflect favorably upon me, but rather that which will give us all what we would want and hope for.

I hope that we will always be ourselves. We have all been gifted with certain abilities, skills, and interest. And I would hope that we would develop these gifts and enrich ourselves, and those around us. I'm sure we all have a large measure of intelligence. Some of us more than others. But this really isn't important, for the measure of a man is not what native abilities he has, but what he does with them. I hope I will never influence any of you in a selfish attempt to make you into my own image. For you cannot be me, and I cannot be you. We should respect and accept each other as individuals.

I hope that the profession we have chosen will help make this a better world. Life is pretty short, and the older we get the shorter it will seem. We have very few years in which to exercise our abilities. And what a waste if we leave this world no better than when we arrived. Therefore, I hope we did not choose our profession only because it might give us comfort, status, etc.—but rather, I hope we chose it also to utilize our abilities to the fullest, and directly or indirectly make many people happy and enjoy life more. For people is what life is all about. And I sincerely hope that when we leave this life, at least a few people will be able to say that this world is richer because you and I lived in it.

I would also hope that we would be passionate men. That we will have the capabilities to get furiously and effectively angry at any injustice or wrong. I would rather have us angry people that polite conformists. Oh, I may not always be happy about our decisions and actions, but I think I would rather have us on the side of outrage than on the side of complacency. I hope we will be passionate men.

But I also hope that we will be tolerant men. That we can appreciate the good and variety of people in this world. That none of us will show our stupidity of judging people by the race they belong to, or the country and culture they came from. I hope we will be tolerant of other peoples' opinions. That we will not condemn persons because they hold views different from our own. By all means let's cling to our convictions and act on them decisively. But always keep a corner of our minds free to allow for the possibility that we may be wrong.

And finally, I hope we will be courageous men. I'm not speaking of "punching some one in the nose" when we are wronged. That's not courage, but childishness. I'm speaking of courage to place principle above reputation. I know I may not always agree with our actions and beliefs. But secretly I have to admire a person for the courage to stand publicly as a lonely minority for what he believes to be right.

Life has its ups and downs. There may be times when we may misunderstand each other. There may be times when we may get angry with each other. And there may be times which will try our fellowship. But I hope underneath it all will be a deep, abiding, and mutual interest able to grow through any crisis we may be faced with in the Midwest.

Ed Wollenberg, President

JAMES L. HOLMES JOINS AGRI-SYSTEMS

James L. Holmes, Mid-continent director of the USGA Green Section until March 1, 1969, has joined Agri-Systems of Texas, Inc., Bryan, Texas. He is once again associated with Dr. Marvin H. Ferguson, his former boss with the Green Section for 12 years. Agri-Systems was formed and designed to be active in all phases of golf course design, construction, reconstruction, consultation and irrigation. The company is prepared and staffed to perform any phase of golf course building or golf turf endeavor. As well as Holmes, the technical staff includes Dr. Marvin H. Ferguson, known throughout the world as a leading turf scientist, Herman R. Johnson, a Texas A&M University graduate, a former golf course superintendent and an irrigation authority. E. Earl Merrill, Jr., member of the American Institute of Architects and John R. Darrah, member of the American Society of Golf Course Architects are associated.

Turf grasses will be another adjunct to the comprehensive activities of Agri-Systems. Various type stolons, primarily of improved and selected bermudagrasses and Zoysia will be available. Sod, of selected varieties, is being grown. Agri-Systems hopes to become active in improved-strain selection work, in the future.

A soil testing laboratory has already turned out hundreds of physical soil analyses which specify a soil mix for greens. These specified soil mixtures are designed to most effectively control soil compaction-moisture-air relationships for culture of putting green turf. The laboratory also is equipped to do other soil and atmosphere testing, which encompases contamination and pollution.

The entire staff of Agri-Systems will be active throughout North America, and any other part of the world, where their knowledge, and activity can be put to productive use.

SUPERINTENDENT OF THE SEVENTIES

By Dave P. Lage
Golf Markets Manager
AstroTurf Recreational Surfaces

A new age of technology has now arrived for the golf course superintendent. Recent years have seen an increase in the technology available to golf course superintendents through state universities and extension programs as well as state, regional, and national golf course superintendents associations. At one time less than 5% of the superintendents in the U.S. had any formal college education. This percentage has greatly increased during the past 10 years and many superintendents, old and young alike, now are taking advantage of university sponsored "short courses" and degree programs in turf. In the future, courses of this type will have to include the selection and use of "artificial turf." The golf course superintendent of the 1970's will have to be an expert in two fields — natural turf and artificial turf.

AstroTurf® is the only nylon turf with proven golf course performance available on the market today. Its existance is due to recognition by Monsanto of the basic need of many of today's golf courses. Tee areas which were built too small for today's volume of traffic as well as par threes, practice tees, shaded or poorly drained tees are "naturals" for AstroTurf. Reseeding or resodding problem tee areas are expensive both from the material cost and labor cost standpoints. This is worsened by the lack of responsible labor available to the superintendent. In fact many superintendents, especially those near metropolitan areas, claim that help of this type is nearly extinct.

AstroTurf is available in two forms for golf course use — AstroTurf tees and AstroTurf greens.

AstroTurf tees provide a uniform playing surface which is virtually maintenance free and resistant to weather, fungus and insects, etc. Even under extreme high levels of traffic the product retains its original beauty. Tests conducted by an independent engineering firm, interested in using AstroTurf on a golf course of their design, proved the durability of the product. A machine designed to continuously swing the head of a 7 iron in excess of 90 mph (the average speed of a golfer) hit the AstroTurf in one spot 170,000 times at the end of which time it was still not necessary to replace the AstroTurf. AstroTurf tees are easy to install. Golf course superintendents find that Monsanto's AstroTurf tee system is as easy as building a sandbox — in fact, that's what you actually do. Build a sandbox, fill it with sand and stretch the material over the top — tacking to the sandbox with a nailer strip.

Applications of AstroTurf tees are on short iron holes, par 3, practice tees, small tee areas, shaded tees, driving ranges, locker rooms and any high traffic tee area on a golf course.

Indeed the era of synthetics is upon us. Land is becoming more expensive and less available. People have more leisure time and money and golf is receiving the lion's share of both. Synthetic turf can be an important tool in the superintendents bag, and the "superintendent of the Seventies" will make applications of AstroTurf in areas that we at Monsanto have not yet thought of.

Weed Control In Farm Ponds

Man derives some of his greatest pleasures from water. Recreation has become an essential part of our way of life. Fishing, swimming, boating, competitive water sports, camping and nature study depend and are enhanced by clean water.

The concentration of a greater population density upon the shores of inland waters through pollution and the inflow of nutrients from surface run-off, increased water use and increased water fertility have created excessive weeds and algae growth in water. Such nuisances may eliminate almost all recreational uses of a lake, create disagreeable odors and appearances, lower property evaluation and kill fish or jeopardize fish population.

Aquatic weed control is **prescription control,** just as our complex agricultural weeds must be prescribed for each crop. Submersed weeds require the right chemical for each group of weeds.

Waters treated with the following chemicals should not be used for drinking or irrigation purposes for at least ten days.

Only half of a small body of water should be treated at one time, the remaining half should be treated approximately five days later. The reason for this precaution is that when weeds are decaying oxygen is depleted and fish may suffocate.

Water milfoil should be treated with 250 lbs. of 2,4-D Granular 20% per acre, preferably during the month of May.

Coontail, Elodea, Curlyleaf pondweed and Richardson Pond Weed should be treated with 7½ PPM of sodium arsenite during May and June. For example, a one acre pond 6 ft. deep would require 30 gallons of sodium arsenite. Most manufacturers have application tables already computed. It is based on the formula length x depth x 2.7 x 7½ PPM divided by 4 equals gallons per acre. Sodium arsenite is generally sold 4 lbs. actual per gallon.

Leafy pondweed, Sago pondweed, small pondweed and Duckweed should be treated during May and June with two gallons of Diquat per acre.

Water Lily, Spatterdock, Arrowhead and Watershield should be treated with 8 ounces of liquid Silvex in 5 gallons of water with a detergent (sticker spreader) sprayed on foliage or 150-200 pounds per acre of granular 2,4-D ester.

Filamentous algae are commonly called "pond scum" and can be usually controlled with ½ PPM of copper sulfate or 1.36 pounds per acre foot of water.

Chara should be treated with 1-1½ PPM or a minimum of 2.7 pounds per acre foot. Chara usually requires at least three treatments to secure control. Treatment should be made at one month intervals. Copper sulfate is more effective when water temperatures are above 60°F. Chara is particularly resistant to chemical control. Concentrations of copper sulfate up to 1 part per million are considered safe for fish.

Proper water management, recreational, hunting, commercial fishing and conservation of natural beauty requires a knowledge of aquatic weed identification, fish habitat and proper use of vast numbers of available chemicals. Control of aquatic plants is becoming a recognized management tool in the field of water conservation. Continued recreation, fishery management, navigation and other water uses that provide pleasure are dependent on aquatic weed control.

Cecil F. Kerr.

Price of sod is up and sod is scarce due to Winter Kill.

Winter Desiccation

Mr. Richard Horner of Horner Sod Farms in Wisconsin reported —

Near perfect weather is the big news in regard to the ice situation on Wisconsin sod fields. During the middle of February about 3/4 of all the sod in Wisconsin was covered with an almost solid sheet of ice.

This ice cover was the result of a heavy coat of freezing rain about Christmas time. Later about a foot of January snow was covered with another layer of freezing rain.

The situation at that time looked very grim and a substantial winter kill appeared probable. However, Wisconsin enjoyed its driest February on record. Day time temperatures rose to the thawing level every day and the ice has disappeared in an almost unbelievable way.

Ice cover at this writing (March 10) is less that 1/4. While winter kill could still occur, it appears less likely with each passing day. Final results will not be known until the middle of April but it seems unlikely that winter kill will be a significant factor in 1969.

RECORD'S RECORD

By Lee Record
USGA Green Section
Mid-Continent Agronomist

March went out like a lion! Rain, snow and subfreezing temperatures of late March and early April kept turf loss at a minimum. Moisture stress was getting critical, few irrigation systems had been turned on. Heaving and thawing of the soil was normal and as always, too many greens were being played. Temporary greens for play in late fall, winter and early spring, must become the rule rather than the exception.

This fall I will write an article for member education on temporary greens, ice damage, desiccation, etc. A little more knowledge for locker room debate. May the strong at heart win out.

Why is it, the first warm days of March excites man's adrenalin? Nature is not meant to turn green over night. Why the early adrenalin-nitrogen race? For color? Color in turf is like beauty in women, leaf deep and deceptive. Force the plant too early in the season and lose a good percentage of it in the summer.

Ninety days of ice remained on greens in the Des Moines, Iowa area from December 17 to March 17. Ice damage? Not on Norm Westfall's (recently retired superintendent) Wakonda golf course. I talked with Norm while in Des Moines and asked what his secret was. Last November an automatic watering system was installed around greens. During the first snow in December, the watering system was running to see if any leaks had developed during installation. Norm said, "the greens got soaked real good."

Any snow mold damage on Norm's greens? A couple of spots, but you had to look for them. Preventive snowmold fungicides have not been applied for years. The greens at Wakonda consist of South German, Metropolitan and Washington, and a one year old Penncross green.

What about **Poa annua?** A spot or two, something you wouldn't look at twice. Norm is one of few who have conquered **Poa annua** on greens. This has to be the success story of reducing ice injury.

Watch out for Paraquat and Diaquat! From the Suffolk County Farm News, New York, "Paraquat and Diaquat are known to trigger an unknown irreversible lung deterioration. Once this action is initiated, death appears almost certain as there is no known antidote. Death may result in a few days, a week or two or three weeks.

"Breathing the mist is believed to be more serious than low level ingestion. All who work with these compounds should handle them with considerable care using respirators, goggles and other protective clothing."

EQUATION OF PIPES

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. With the same pressure however the velocity is less in the smaller pipe and the volume delivered varies as the square root of the fifth power of the pipe diameter. The table below is calculated on this basis.

The figure opposite the intersection of any two pipe sizes is the number of the smaller sized pipes required to equal one of the larger sized pipe; thus on 4" pipe will deliver 5.70 times as much water as one 2" pipe.

Pipe Diameter	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"	181.00	32.0	11.7	5.7	2.1	1

NOTE: One 3" pipe will deliver more water than one 2½" pipe PLUS one 2" pipe.
A 1" hose will deliver more than TWICE the water than two ¾" hoses of equal length.

C. E. (Scotty) Stewart

THE SOD GROWERS ASSN. OF MID-AMERICA ANNOUNCES

The establishment of turf grass at the Morton Arboretum in Lisle, Ill. has been undertaken by our Association. The purpose of the plots is to demonstrate and evaluate various turf grasses. This will be a valuable service to the public in that they could see a comparison of the various turf grasses presently available.

Plans are currently being made to construct the plots this summer. Twelve bluegrass varieties have been proposed to be initially planted in the plots: Merion, Delta, Common Kentucky, Newport, Windsor, Fylking, A-10, A-20, A-34, Pennstar, Sodco and Blend. Sod will be used where possible. If any sod grower has sod available of Common Kentucky, Newport, Pennstar, Sodco or Bland (please specify percentage of varieties in blend), please notify the secretary of the Association.

Each variety is to be planted into two replications of 100 square yards each. One replication will be grown under high maintenance, the other under low maintenance. All plots will be mowed at two different heights: a low cut and a high cut. The high maintenance series shall be mowed more frequently, receive irrigation, be fertilized regularly and have the weeds controlled when needed.

Additional ground will be available for future expansion of plots for new varieties.

AUTOMATICS — The Superintendent's View

By John Dunlap

A great deal has been written and said about automatic irrigation systems in the past 10 years; some of it good and some bad. Many of the first automatic systems were badly engineered and also poorly installed; consequently raising the voices of dissent. In recent years equipment advances and new technologies have greatly increased the reputations of automatics.

The new "super" automatic systems that are now being installed in the Northern Ohio area are very large investments, ranging in costs up to $200,000. Any project of this magnitude takes careful planning and engineering, so for the next few minutes let's take a look at what is involved in getting one of these systems into the ground.

Planning and design for a system must start at least a year ahead of the time you hope to install it. Contact qualified irrigation personnel to help you layout a basic plan for your course. After the basic plan is made the superintendent should then go over it and make all necessary changes so that the system is now custom designed to water his particular course as effectively as possible. The next step is to contact as many equipment manufacturers as possible and get some of their equipment for your own testing purposes. It is quite surprising to see how much performance differences there are between various makes of equipment. times no matter if 1 Head or 20 heads were in operthe best job, whether you prefer electric or hydraulic operation; and what type of pipe you think will best fit your needs. But choose carefully because there are no bargains and beware of people offering "deals." Above all else, do not design the system to a preset dollar figure. Design the system to meet your specifications of performance and then put this plan out for bids to good irrigation installers.

Beware of plumbing contractors bidding on such installations — they simply do not have the experience necessary to install something this complex.

When the bids are received from the installers, turn the bids and contracts over to your club lawyers and make sure everything is down in black and white. In the final analysis of the bids the lowest bid does not necessarily represent the best dollar value, so here again choose carefully.

Even though the system will probably be installed by an outside contractor and his crew, it is the course superintendent's responsibility to see that the system is installed properly. So let's look at a few things that are important for good installation.

We mentioned before that planning should start at least a year ahead of time. One reason is so that the contract can be signed several months ahead of the actual installation date and the installer will have plenty of time to order the bill of goods and have them delivered to the job site. Delays caused by lack of piping and sprinkler materials is very costly. When the paper version of the system design is transferred to the course, the superintendent should be responsible for the placing of all sprinkler heads and where necessary be willing to make field changes if they will improve upon the basic design.

The pumping facility of a super automatic is very important. In the past, many systems were installed with much too small a G.P.M. capacity and this impaired the proper programming of the system. The G.P.M. of today's systems should be adequate to run all controllers simultaneously without loss of pressure. This is of particular value when a syringe cycle is included in the system since a syringe cycle must be completed in as little time as possible to be of value. A good syringe cycle should be able to wash off the entire golf course in no more than 30 minutes, and in order to do this the pumping capacity for most systems should be at least 1200 G.P.M. and better yet around 1500 G.P.M. Another feature to consider would be some type of pressure regulating valve so that main line pressure would remain constant at all You should decide which kind of electric valve will do ation. All pump controls should be fully automatic and be kept as simple as possible. This is one area where designers tend to over design. Flow switches and pressure switches still give the best pump control available and are almost completely trouble free.

Since the operation of a master control was covered in the previous talk we won't dwell on it here except to say that this is the heart of an automatic system. Without a master control panel the superintendent becomes a virtual slave to the system.

Every time a change in the weather occurs he must visit all the controllers and reschedule his watering program. With a master control he can change, stop, or start all watering cycles from his office. This convenience will pay for itself many times over because the superintendent will easily change his watering program to match day to day weather changes instead of "letting it go" as previously programmed.

After the system is installed and in operation you can expect to spend at least a year balancing and adjusting the system to perfection. Time clocks must be adjusted to compensate for various soil conditions, nozzle sizes on some sprinklers will have to be changed, and pressure might have to be adjusted at individual heads to give proper operation.

All of the things we have said in the last few minutes sound like a lot of work, and they are, but when you are finished you will have a most efficient irrigation system that will be able to give you "quality control" of the water applied to the course.

Above article taken from the "Northern Ohio Turfgrass News" (Editor — John Dunlap). John says, "Automatic Irrigation has really gone wild in their area with each new system becoming more elaborate than the one before."

BOWLING AT SPORTMAN COUNTRY CLUB

Popular With MAGCS Superintendents

L. to R. Tom Gilman and Lester Mach

Host: Bob Block

L. to R. Wayn Trometer and Ken Goodman

L. to R. Ray Schmitz, Ross Smith and Russ Reed

Ed. Devinger and guests

Frank Dinelli

CONFERENCE AND SHOW COMMITTEE OF THE ILLINOIS TURF FOUNDATION

At the Illinois Turfgrass Foundation Board Meeting, held March 26, 1969 at the Stock Yard Inn in Chicago, Illinois, the Board of Directors elected to hold the Tenth Anniversary Conference and Show at the Arlington Park Towers Hotel, Arlington Heights, Illinois.

Illinois Turf Grass Foundation President, Robert G. Johnson, appointed the following Conference and Show Committee:

GENERAL CHAIRMAN: Oscar Miles
Co-Chairman: Bob Johnson

EDUCATION CHAIRMAN: Mr. Jack Butler, Dr. Mike Britton, Dr. Jack Gartner, Mr. Tom Guttschow

EXHIBITOR CHAIRMAN: Bob Johnson, Leon Short, Dorothy H. Carey

ARRANGEMENTS: Oscar Miles, Ronald Damgaard, Dorothy H. Carey

JAPANESE BEETLE REGULATION REVISED

The U.S Department of Agriculture has announced a change in the exemptions associated with the Japanese Beetle Quarantine, according to Ray Brush, Secretary of the American Association of Nurserymen.

Previously, nursery stock could move on a "through bill of lading" or "through truck" without a certificate or permit from one regulated area to another regulated area. This exemption has been deleted from the Japanese Beetle Regulation. This means that nursery stock must now have a certificate attached, to indicate that it has been treated or a "limited permit" attached indicating that the stock is uncertified and must remain within the regulated area to which it is destined.

There are several reasons for this change. Federal and state officials are endeavoring to keep untreated stock from moving into non-regulated areas and this new procedure gives better control. Better protection will be afforded the destination nurseryman, as he will be assured of the type of material he is receiving, said Mr. Brush.

Control over movement of stock into outlying. infested areas would assist in preventing beetle population buildup in areas where attemps are being made to suppress or eradicate Japanese beetle.