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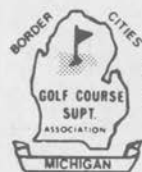
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ECONOMICAL USES OF MOTORIZED EQUIPMENT

By **DR. J. R. WATSON**
Vice President
The Toro Company
Minneapolis, Minnesota

Today there is a unique opportunity for those of us involved in the recreational turfgrass industry. For, in spite of the inconveniences and sacrifices some have experienced as a direct or indirect result of energy costs and a somewhat slower recovery from last year's recession, we have learned to cope. Manufacturers and suppliers have learned to cope by improving manufacturing techniques and by developing and implementing short and long range plans. So can you for your turf facility. It seems to me that the green areas close to home—the parks, golf courses, the playgrounds and the home lawn—are now receiving, and will continue to receive, the brunt of recreational traffic. Heavier play will put greater stress on the turfgrass areas. And, this can be countered only with good maintenance practices and careful planning of all operational activity.

Herein lies a major opportunity for everyone involved in the turfgrass and recreational industry. We must provide more service than ever before to the members and users of all turfgrass facilities, and managers of recreational facilities must realize that maintenance of their turfgrass areas is more important than ever—both for private and for governmental-municipal, county, state and national-recreation areas. Maintenance must be extensive not only to ensure the best possible conditions for recreational activity but also to protect the heavy investment in property values that individuals through their governmental agencies have made. The turfgrass manager must utilize his managerial skills to

analyze each facet of his job function, the performance of his equipment, his operating procedures, his maintenance programs and his personnel policies. He must ensure efficiency at all levels.

To ensure economical use of motorized equipment two areas are key—equipment and people.

ENERGY AND EQUIPMENT

A short term approach to coping with today's economic environment demands consideration of energy conservation. There are six steps or programs which will not only conserve fuel and ensure economical use of motorized equipment but also will enable turfgrass managers to continue to provide quality turf. These are:

(1) Select the most efficient piece of equipment for each job. Generally, reel mowers are more efficient than rotary or flail mowers. The scissors action of the reel mower not only cuts better but requires less power, consequently consuming less fuel. With the same mowing speed, reel mowers will use up to 50 percent less fuel per acre of cut grass than rotary mowers.

Data developed by Toro's engineering division indicates several significant points with regard to equipment selection and fuel consumption. For example, our 70-inch Professional which is a triplex reel mower is capable of cutting a 70-inch swath of grass with a 6.25 horsepower engine, while a Trojan—which is a rotary—has a 14 horsepower engine for a 60-inch width of cut. The 70-inch unit cannot be used for all trimming operations, but where fuel supplies are critical, it makes good sense to use the smaller engine when-

Continued Page 12

O.J. Noer Foundation, Inc. Report

by: JAMES M. LATHAM
Research Director
O.J. Noer Research Foundation, Inc.

The O.J. Noer Foundation was initiated in 1959 by associates and friends of O.J. Noer, to honor him for his lifetime of work in turfgrass improvement throughout North America. Noer was a native of Stoughton, Wisconsin who graduated from the University of Wisconsin and did graduate work there which resulted in the production and marketing of Milorganite.

The Foundation is dedicated to the generation of original research through grants to universities and experiment stations. Most of these projects, being basic in nature, would have no "commercial" support. But being basic research, the information will have value over a broad range of interests.

Much of the data generated has no immediate, direct effect on turf management since it is fundamental in nature. It does, however, form a base from which more practical projects can be developed. Dr. Jim Beard calls this the "fallout effect". If basic facts have been developed, a great deal of time, money and effort has been saved to do other things.

An example of this fallout effect can be illustrated by thatch studies. The Foundation established grants at Michigan State and Texas A & M concurrently to study the Identification, Cause and Effect and Control of Thatch on cool-and warm-season grasses. Since then, there have been

many projects on thatch dealing with subjects like insecticide effects, disease generation, etc., all based on data accumulated by the initial projects.

The very first project was at the University of Wisconsin by Dr. Jim Love. This was the first time anyone had shown visible nutrient deficiency symptoms in turfgrasses. The paper by Love and the photographs are classics in the field. The color plates, by the way, can be found in Dr. Beard's forthcoming book.

Wisconsin does not have the extensive turfgrass research facilities found in other states. It is incumbent upon superintendents, however, to put money into research since they will be the beneficiaries in the long run. To do this on an orderly basis, an organization such as the O.J. Noer Research Foundation, Inc. is the best vehicle to use.

Most of the monies contributed to the Foundation comes from Milorganite distributors, who have a self-assessed fee on tonnage sold each year. Superintendents' Associations across the country also make gifts along with interested individuals and companies like Jacobsen and Toro.

Noer grants have been made toward worthwhile projects in all sections of the country, from New Jersey to California and from Florida to Washington. The following list provides a partial

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view of the range of subjects covered.

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- Visual symptoms of plant nutrient deficiencies, major and minor.
- Effect of fertilization on turf diseases.
- Effect of cutting height on root growth and chemical composition of Merion Bluegrass.
- Nutritional influence on dollarspot disease in bentgrass.
- Thatch on golf greens, North and South -- its cause, composition and control.
- Fertility problems with sandy soil mixtures.

- Special soil testing techniques required in turfgrass areas.
- Influence of herbicides on turf diseases.
- Fertility levels in **Poa annua** control.
- Development of new grass varieties requiring less water and fertilizer.
- Management practices that influence thatch development on golf greens.
- Improvement of root growth on golf greens.
- Water management in relation to heat and drought stress.
- Nitrogen-fixing organisms for cool season grasses.
- Microscopic time lapse photographic studies of root nematodes.

Ohio State University

There are four national-level funding agencies for turfgrass research: the U.S.G.A. Green Section provides the most money, followed by the G.C.S.A.A. Research and Education Fund, the Noer Foundation and Musser Foundation. Most G.C.S.A.A. projects are, and rightly so, on a more practical plane, such as the Toronto bent problem in Chicago last year when

Continued Page 11

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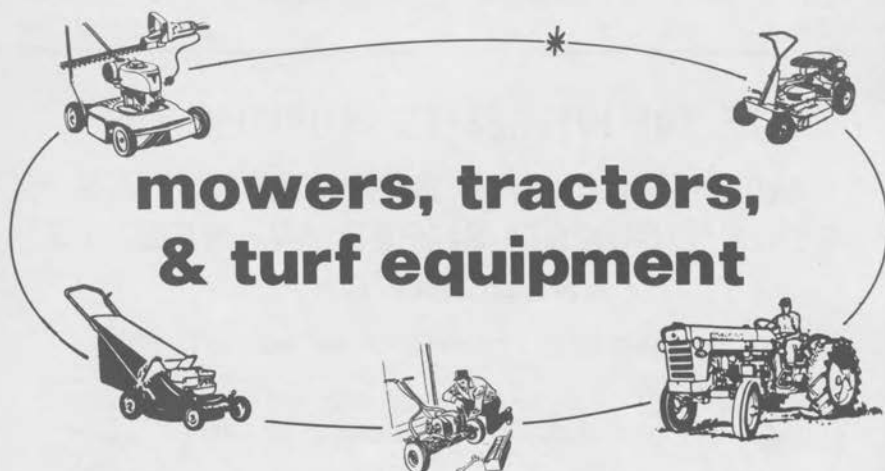
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OFFICIAL SLATE OF CANDIDATES DETERMINED

The GCSAA Nominating Committee has announced the official slate of candidates for the 1982 annual election.

President James A. Wyllie, CGCS Vice President Robert W. Osterman, CGCS James W. Timmerman, CGCS Director Paul Boizelle, CGCS William J. Emerson John P. Hayden, CGCS James E. Lindblad, CGCS Richard Slivinski, CGCS All chapter secretaries will be mailed the official notice of the slate of candidates as declared by the Nominating Committee. This mailing is scheduled to go out in November.

"MANAGING CHANGE" IS GCSAA'S 1982 CONFERENCE THEME

"Managing Change, with GCSAA at the Helm" is the theme of GCSAA's 53rd International Turfgrass Conference and Show, Jan. 30-Feb. 5, in New Orleans. The theme reflects the Association's continuing efforts to prepare its members for the challenges of the future.

"Whether we call them limited resources or management challenges, the hurdles are definitely there--all part of change," GCSAA President Michael R. Bavier, CGCS, said. "Our job is to stay on top of and to help direct this inevitable change."

The conference educational program will feature two, three-hour symposiums on water and the challenges it will offer in the coming years. Panels of nationally recognized experts will attack the problem from several angles, providing a wide base of information to help superintendents plan for the future.

Those symposiums are just two of the 10 education sessions scheduled during conference week. The conference schedule also will include six pre-conference seminars, the USGA Green Section's annual educational conference, a Mardi Gras reception, the GCSAA's annual membership meeting, an expanded spouses' program, the conference banquet, a management tour of the Superdome and a host of other activities.

Make your plans now to attend what may well be the most important GCSAA conference in history.

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ANNOUNCING
DESTRUCTIVE TURF INSECTS is the title of a new long-awaited book by Dr. Harry Niemczyk, turfgrass entomologist. The book covers pests of warm and cool season grasses, contains over 130 color photos and is written in easy-to-read language. Included is a color photo guide to identifying insects and mites that inhabit the soil, thatch, leaves and stems. Nine Chapters cover: Life Cycles; Principles of Control; Preventive Programs for Select Major Pests; Equipment and Methods of Detecting Turf Insects and References. Available October 20, 1981, the book is 8 X 11, spiral bound with a durable plastic cover. \$18.95 plus \$1.25 per copy postage and handling. HDN BOOK SALES, 2935 Smithville W. Rd., Wooster, Ohio 44691.

Advice to Millions Who Rush Through Life

Take time to think –
 thoughts are the source of power.
 Take time to play –
 play is the secret of perpetual youth.
 Take time to read –
 reading is the fountain of wisdom.
 Take time to pray –
 prayer can be a rock of strength in
 time of trouble.
 Take time to love –
 loving is what makes living worthwhile.
 Take time to be friendly –
 friendships give life a delicious flavor.
 Take time to laugh –
 laughter is the music of the soul.
 Take time to give –
 any day of the year is too short for
 selfishness.
 Take time to do your work well –
 pride in your work, no matter what it is,
 nourishes the ego and the spirit.
 Take time to show appreciation –
 thanks is the frosting on the cake of life.

CERTIFICATION TESTING AT CONFERENCE

The certification examination is scheduled for Sunday, January 31, 1982 during conference week. To be eligible to apply for certification one must be currently employed as a Golf Course Superintendent and have been a Class A member of GCSAA for at least **two years**. However, we have

determined that if your two year period is completed by February 28, 1982, you will be eligible to take the certification examination during conference week. Qualified candidates should contact Bonnie Stephenson, Education Department, at GCSAA Headquarters before December 31, 1981, to arrange for testing at the 1982 conference.

TERMINATION NOTICE SENT TO MEMBERS WHO DID NOT PAY ANNUAL DUES

Those GCSAA members who did not pay their 1982 annual membership dues by September 30, 1981, have been terminated from the membership roles. To be reinstated as a member in good standing, a terminated member must reapply. A terminated member can use a short form for reapplying provided he/she reapplies for membership within 9 months of their termination date. After 9 months, the individual must reapply through the same procedure as a new member.

O.J. Noer Report, cont.

G.C.S.A.A. and the Green Section went to the aid of members to try to solve a local, but vexing problem. There are many local or regional support systems for research. Michigan and Ohio are nearby examples of strong local support. The Midwest Turf Foundation gives regional support to Purdue. The South Florida G.C.S.A. primarily supports the South Florida Experiment Station now that a strong research staff has been assembled there.

One final word. Noer Foundation grants are made from investment profits. Thus, any donations continue to bring dividends from now on. In addition, since there are no paid employees, there is a minimum overhead. In 1980, the management cost of managing the \$164,000 fund amounted to only 2%. Officers and Directors receive no pay, no transportation or living expenses at meetings. They serve because of their remembrance of O.J. Noer and their commitment to the field from which their livelihood comes. That's how the Foundation has generated \$180,000 for turf research in the last twenty years.

Economical Equipment, cont.

ever possible.

When you are purchasing turf equipment, you should keep in mind that the number of blades in a reel not only affects the quality of cut, but also the fuel consumption-economy. A five-bladed reel will use eight to twelve percent less power and fuel than a six-bladed reel. However, determining the quality of cut for a given area is the responsibility of the turfgrass manager or superintendent, so it is up to him to decide if he can take advantage of this more economical opportunity by using fewer blades on the reels.

(2) The use of diesel fuel, rather than gasoline, is my second suggestion for fuel conservation and economy of operation. Diesel fuel generally costs less than gasoline and the diesel engine has proved itself to be from twenty to twenty-five percent more efficient than the gasoline engine. This means fewer gallons and less dollars to perform a given task. This increase in efficiency may be sufficient reason to consider diesel power when purchasing new

equipment.

(3) Over the last several years, the most rapidly rising cost factor on turfgrass areas has been labor. In fact, labor comprises the largest part of the total

Continued Page 15

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and laugh
and vent frustrations
to ask for help
and tease
and yell
to be touched and hugged and
smiled at

A family is PEOPLE
who care when you are sad
who love you no matter what
who share your triumphs
who don't expect you to be perfect
just growing with honesty in your
own direction

A family is a CIRCLE
where we learn to like ourselves
where we learn to make good decisions
where we learn to think before we do
where we learn integrity and table
manners and respect
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where we are special
where we share ideas
where we listen and are listened to
where we learn the rules of life to
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THOUGHT FOR THE MONTH

Some days, conflict is inevitable; a colleague disagrees with one of your pet ideas, all your subordinates seem bent on taking issues with your directives; your boss is determined to get your approval of what you consider to be a poor plan. What can you do? Here are some basic strategies for re-routing potential arguments into more constructive channels: 1) Listen. Try to hear all of what the other person is saying instead of planning your own reply or marshaling arguments against what is being said, or interrupting the speaker before you've heard what he has to say; 2) Try to agree with at least some of the other person's points; 3) State the other person's position as accurately as you can, to his satisfaction, so that he's sure you understand what he's saying; 4) Avoid flat statements of disagreement and concentrate on probing questions; 5) Back up your own viewpoint with reasoning and facts, not with emotion.

Avoiding an argument takes discipline, even planning, but the results are worth the effort. - Kano Laboratories

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6 ANSWERS TO QUESTIONS WE NEVER THOUGHT YOU'D ASK (BUT DECIDED TO ANSWER ANYWAY)

1 Yes, GCSAA can help you become a better superintendent. One way it does this is through educational seminars and conference sessions it sponsors each year to help you become better informed about turfgrass diseases, pesticides, landscaping and management practices.

2 Yes, GCSAA is helping to further the advancement of the turfgrass industry. Through the GCSAA Scholarship & Research Fund, Inc., GCSAA provided more than \$13,500 last year in research grants to leading turfgrass programs. GCSAA also provides educational opportunities to turfgrass students through annual turfgrass scholarships.

4 Yes, GCSAA offers recognition for superintendents. Through its public relations efforts, its magazine, and its award programs, GCSAA helps promote the image and the professionalism of the superintendent. GCSAA also provides information to superintendents about how they can use public relations to promote their own image to their course, their community and their association.

3 Yes, GCSAA provides a meeting ground for superintendents. Each year, GCSAA sponsors an annual conference and show for its members. Last year more than 6,500 educators, industry representatives and members from all over the world attended. GCSAA's executive committee decided at its last board meeting that the conference experience is so valuable that first-year members should be encouraged to attend by being given free admission.

5 Yes, GCSAA provides each member with a life insurance program. Supplemental insurance, disability and pension programs also are available.

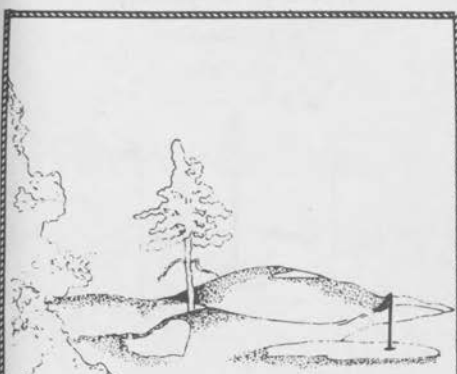
6 No, GCSAA can't help you with your golf handicap. You'll have to work on that yourself.



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Economical Equipment, cont.

budget, and the costs of labor are increasing as fast or faster than those for equipment. Because of this relationship of labor to equipment, many turf managers are allocating more of their funds for the purchase of higher capacity, labor-saving equipment.

(4) Clean and properly adjusted equipment is more economical to operate because less power is required to operate it. Proper adjustment of belts, bearings, chains and shafts can reduce the friction within the machine allowing for more power for work output. Frequent lubrication of vital parts will also reduce friction.

The tire pressure of any machine should also be maintained at proper pressure to reduce the rolling resistance of the machine.

With reel mowers, the bedknife adjustment is critical. Over-tightening the bedknife wastes power, and an insufficient bedknife contact will not maintain the slight wear essential to maintaining sharp edges. A sharp reel mower will improve the quality of cut, which in turn, could prolong the mowing interval in some areas. Sharp edges will also allow reduction of engine RPM while maintaining good cutting quality.

The proper maintenance of the vital parts of any machine is important not only in the effort to conserve fuel but also in extending the functional life span of the machine. But no part of the machine is as critical as the engine in achieving fuel economy. Just as with your automobile, a properly maintained, well-tuned engine operates more economically.

Several steps that should be followed concerning the engine include adjusting the carburetor to provide maximum fuel-to-air ratio. Checking the ignition system to ensure clean points and plugs, and timing, to provide maximum power. The engine air cleaner is crucial to its durability. A clogged air cleaner can change the air-to-fuel ratio and use excessive amounts of fuel. Proper adjustments and maintenance in the combustion chamber are important to extended engine life.

(5) Mowing practices also may be a

Continued Next Page

Economical Equipment, cont.

means of saving fuel and thereby contribute to economical use of equipment. Some examples:

-Plan mowing patterns that require the least amount of transport between locations.

-Use the least amount of overlap consistent with the skills of your operators.

-Select the height of cut best suited for each area—you may be able to increase heights—and thereby add one or two days to your mowing cycle.

-Where possible, eliminate mowing of steep slopes.

(6) Leasing. From a managerial standpoint, economics of operation may result from leasing rather than outright purchase of equipment. Leasing may:

-Conserve your working capital. The acquisition becomes an operational expense rather than a capital expenditure, and improves cash flow.

-Offer an opportunity to obtain equipment without excessive cash outlays. With payments spread over a long period of time, the equipment is actually paying for itself as it functions. When rentals are treated as a fully tax-deductible expense, cash outgo decreases and usable capital is increased.

-Preserve existing credit. Your established credit lines are not affected and remain readily available. Leasing provides an additional, nonconflicting source of credit, thereby increasing your borrowing base.

-Overcome budget limitations - a factor you can easily identify with. The minimum cash outlay involved with leasing, plus modest payments, allows one to fit the lease into the tightest of budgets. Even when spending schedules are severely limited, leasing allows an organization to obtain the equipment needed when it's needed.

-Minimize the effect of inflation. The bulk of your payments are made with tomorrow's dollar which, if inflationary pressures continue, will be cheaper than today's.

-While it may offer an advantage as a tax deductible expense, leasing is not based on a tax program but rather on a capital conservation program; that is, the freeing of capital so that it can be used effectively to develop profits.

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flexibility. With leasing you have a wide variety of plans and programs geared to fit specific financing needs—long term or short term, straight line or accelerated, renewable or replaceable. So you can see that leasing can play a valuable role in coping with inflation.

The second area that impacts every conservation, efficiency of management and economical use of equipment is people, especially supervisory personnel and training or updating of skills.

Efficient maintenance demands the use of equipment that will cut more acres per day per man. It means equipment with greater capacity, more durability and longer life. Such equipment is complex and may require a higher level of training for the mechanics who service such equipment. Thus, the training of operators and mechanics becomes a vital and necessary step to ensure maximum results with minimum expenditures.

Proper or efficient equipment utilization involves planning and supervision. Planning for the most efficient way to use the equipment and to keep it operating. About the turn of the century Frederic Taylor made intensive studies of industrial operations and concluded that anywhere from ten to fifty percent of a man's day may be spent in idleness or non-productive work. Interestingly enough roughly two-thirds of that idle time is the result of inadequate supervision. Initiating methods to correct this situation provides a challenge for all turf facility managers and supervisors. It also emphasizes the basic reason why the manager of a turf facility must carefully study all aspects of the work to be done and ensure proper and adequate supervision.

Crew Motivation. Another area involving people relates to the motivation of your workmen. There are ten points involved in supervisory responsibilities that some authorities believe essential for harmony and maximum productiveness from workmen. They are:

1. Build employee job satisfaction ... not job-happy, but job-satisfied
2. Provide development and growth chances for employees
- ...develop individual talents—point toward promotion based on leadership

Continued Next Page

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abilities, skill and knowledge of the job
function, not salary or the basis of
seniority

3. Treat employees with complete
fairness

... be consistent, be impartial

4. Cultivate an atmosphere conducive
to productive work

...efficient, business-like, but pleasant
— good camaraderie — good fellowship—
take crew on a picnic or a fishing trip.

5. Deal effectively with all gripes and
grievances, regardless of how insignif-
icant they may seem

...handle these situations promptly and
completely no matter how simple you
may think the problem to be—remember
it is very important to your employee

6. Protect employees' physical well-
being

...Check on safety aspects—daily health
habits—OSHA and similar organiza-
tions are demanding compliance

7. Develop employees

...Through training in the latest main-
tenance techniques, coaching, moti-
vating, and personal supervision

8. Promote upward communication
...listen to gripes, grievances as well as
suggestions—involve the crew individ-
ually and collectively in performance
and job critiques

9. Promote downward communication
...pass on all company factual data
pertinent to employees and work—also
compliments on jobs well done—
possibly even a reward system for
employee suggestions concerning cash
saving maintenance methods

10. Take personal interest in employee

Labor and crew relationships play a
vital role in attacking the largest single
budgetary item—labor; hence, offer an
opportunity to attain maximum results
with reduced expenditures. It is
estimated that labor represents
approximately 70 percent of the main-
tenance budgets on most turf facilities.
These labor costs have been at this
percentage level for some thirty to
forty years! The number of people
employed for a given facility may have
dropped from twenty-five to thirty to
ten to twelve. Yet, today turf facilities
have a better quality turf than at any
time in the past—and they are used
more heavily and more intensively.

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