



# 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 per cent 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 whenever 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 per cent 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 per cent 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 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.

[Cont.]

## [MOTORIZED EQUIPMENT CONT.]

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 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, non-conflicting 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.
- And finally, leasing offers a greater 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 energy 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 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 insignificant 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 organizations are demanding compliance
7. Develop employees
  - ..through training in the latest maintenance techniques, coaching, motivating, and personal supervision
8. Promote upward communication
  - ..listen to gripes, grievances as well as suggestions—involve the crew individually 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 maintenance 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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