



Two major sizes of turf vehicles are marketed today. The vehicle should only be used within its capabilities and maintained according to use and conditions.

TURF VEHICLE MAINTENANCE INCLUDES KNOWING LIMITATIONS

by EDGAR COMBEST

One of the more popular units of equipment found in daily use in landscape maintenance procedures is the utility vehicle. These compact but efficient "work horses" are depended on for a variety of jobs. It would be difficult to imagine a golf course, cemetery or institutional grounds without one or more of these truckster-type vehicles.

There are two major sizes marketed today. A smaller version, represented by the Toro Workmaster and the Red Ryder, has an engine capacity of 14 horsepower or less. Although their weight and box capacities are designed to handle accessories for heavier work loads, they are mainly utilized by supervisory personnel and for jobs requiring lighter loads.

Cushman Truckster and E-Z-GO

GT7 are models of the larger type and have a greater horsepower (18 HP) than their smaller counterparts. These vehicles have more optional accessories than a new Mercedes. Included in this list is a hydraulic dump box or flat bed, aerator, spiker, seeder/spreader, topdressing machine and a 100 gallon spray tank assembly. Maintenance tasks requiring many separate power sources can now be accomplished with one of these vehicles and the proper selection of accompanying attachments.

Because of this increased versatility, these units are in constant use throughout each working day and require a regimented preventive maintenance schedule if they are expected to work properly and to last through an estimated period of life expectancy without expensive repairs.

reflected in the manufacturer's manuals for these vehicles is shown in Table 1.

These are guidelines for units that are used under normal operating conditions. It is important not to overlook obvious adjustments to this schedule when the operating environment is more or less severe, such as extremely dusty conditions or long operating hours during the above time periods. Under dirty conditions the frequency of the maintenance schedule should be increased. The opposite approach should be taken if use is below normal for those time periods.

Problem areas

Problems encountered with utility vehicles are generally caused by the operator exceeding the limits of their designed capabilities. Even with the larger types, that can handle loads over 1500 pounds, overloading often occurs. This is evidenced by frequent breakdown and subsequent replacement of front wheel bearings and rear axle

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Schedule One

A general pattern for preventive maintenance procedures that is

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TABLE I

DAILY	check battery fluid level check tire pressure check oil level
WEEKLY (50 hrs. of operation)	clean engine change crankcase oil service air cleaner
MONTHLY (100 hrs. of operation)	lubricate clutch and throttle linkage check transmission(s) and differential oil levels tighten all loose screws and nuts adjust brakes and clutch tune engine check master cylinder fluid level lubricate power take-off shaft lubricate drive shaft
EVERY 2 MONTHS (200 hrs of operation.)	replace oil filter lubricate starter drive
ANNUALLY	change transmission(s) oil change differential grease replace fork pivot, wheel and axle bearings lubricate steering gear

bearings.

A common complaint of grounds managers in regard to the utility units is engine overheating during normal use. In a majority of these cases, the overheating is caused by the engine not being timed properly (also timing of fuel pump in OMC engine) and not the stress of the workload. Improper or no cleaning at all of the engine, including cooling fins and incorrect SAE and type of oil along with a poor grade of fuel also creates conditions for overheating to occur. OMC and Onan engines should be periodically tuned to guarantee optimum performance and fuel efficiency.

An inventory of a few key parts for any unit of equipment is always a good idea. For utility vehicles it is suggested that a supply of seals, wheel bearings, tires, spark plugs, points, condensers and brake lines be kept on hand. If a reputable distributor is located nearby and has an adequate inventory of vehicle parts, then a personal supply need not be extensive.

Maintenance and repair of these units can easily be accomplished

with the normal complement of mechanical tools including torque wrench, tachometer, dial indicator and a set of micrometers. However, some special tools marketed by the individual manufacturers can simplify some complicated procedures. An example is the OMC special seal drive tools, that when used as recommended, will set the seals at the specified depth.

The manufacturers sponsor factory training schools and distributors sponsor local area workshops to train individuals on specific problem areas of their equipment.

Distributor relationship

When contacting the parts department of the utility vehicle distributor concerning a problem or part replacement, always give them the proper part name and number. A little time and thought to check the microfiche cards or parts manual will save a lot of time and frustration for you and the parts person in obtaining satisfaction and the proper part. This approach will inform the parts department personnel of exactly what you want and not leave him guessing or allow

him to give you what he thinks is the right part.

Problems that require consultation with the service department can be communicated better if an honest, straight forward approach is used. State, as simply as possible, what is happening. Do not adopt a defensive posture and curse the particular manufacturer or unit involved. Keep in mind that most problems are created by improper use and lack of adequate servicing, not by the product manufacturer. However, when problems arise that are directly related to the manufacturing process, manufacturers appreciate whatever feedback the operators or managers in the field can give them. The normal flow of feedback information should be from the user to the distributor's service department and from there to the manufacturer.

Distributors and manufacturers spend considerable effort and money for the purpose of educating customers in the proper handling and servicing of their particular products. Adherence to these established guidelines will prevent a lot of common problems observed in the field today.

Training personnel

A very common cause of equipment failure, and sometimes just plain destruction, is the operator's inability to adequately utilize the equipment. Down time and costly repairs can be traced directly to poor training of employees by the manager on proper use and care of the equipment.

Turf managers, as part of their responsibilities, should develop a detailed job procedure for use of equipment in each major function of their operation. Time should be taken with each new employee to explain the cost, limitations and proper conduct when working the mechanical unit.

The "Four-step Program" on how to instruct, as described in *Personnel Selection and Recruitment*, published by the Administrative Management Society is a proven guide to follow when developing a job procedure.

The "Four-step Program" ends with this conclusive message to supervisors: "If they haven't learned,

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you haven't instructed."

The utility vehicle is a relatively simple unit of equipment to learn to handle. Anyone having the experience of driving a car with standard transmission can adapt quite readily. Proper respect and common sense in using any vehicle should prevail.

A portion of the training session should deal with the proper care and maintenance of new equipment. Many problems occur due to neglecting the crucial breaking in of a new unit.

New engines require a breaking-in period of minimum stress and constant monitoring for initial problems covered by the manufacturer's warranty. The following procedures are general in nature but apply to most new engines during the breaking-in period.

1. Keep speeds to a minimum for the first week of operation.
2. Increase speeds gradually over a period of two to three weeks until desirable maximum is reached.
3. After approximately two weeks, drain the crankcase oil while the engine is warm and replace with recommended type and weight engine oil.
4. Never race engine when in neutral or in low gears.
5. Do not subject engine to maximum stresses or speeds until after a month of operating time.

Safety considerations

Even though utility vehicles on the market today have low center of gravity designs, they should be driven with caution on slopes and when making turns. All manufacturers mentioned produce three-wheel models (Cushman has a four-wheel option) which when making sharp turns at high speeds can easily throw the operator off balance or dump the payload.

The utility vehicle is subject to specific safety rules of operation. Repetition of these key points should be included during the training period and periodically re-

TABLE 2

Four Step Training Program

STEP 1 — Prepare the worker

Put him at ease.
State the job and find out what he already knows about it.
Get him interested in learning the job.
Place in correct position.

STEP 2 — Present the operation

Tell, show and illustrate one IMPORTANT STEP at a time.
Stress each KEY POINT.
Instruct clearly, completely and patiently, but no more than he can master.

STEP 3 — Try out performance

Have him do the job—correct errors.
Have him explain each KEY POINT to you as he does the job again.
Make sure he understands.
Continue until YOU know HE knows.

STEP 4 — Follow up

Put him on his own.
Designate to whom he goes for help.
Check frequently.
Encourage questions.
Taper off extra coaching and close follow-up.

inforced through supervision of equipment operators.

1. Learn the reason for all of the controls on the vehicle. Read the owner's manual completely before operating the vehicle.
2. Place the gear in neutral and apply the handbrake before starting engine.
3. When vehicle must be towed be sure it is in neutral gear. If it contains an auxiliary transmission, it too should be in neutral.
4. Vehicles with hydrostatic transmissions should have special attention before and during towing. Before towing be sure to open tow valve

and it should remain open during towing. Towing should be limited to on and off trailers and in and out of maintenance complex at low speed. Do not tow for long distances or high speed.

5. Feet should be kept inside the vehicle when it is in motion.
6. Reduce speed when operating on slopes, rough ground and in wet conditions.
7. Steering of these vehicles is very responsive. Be careful not to oversteer, especially at higher speeds. Always keep both hands on the steering wheel or handle bars.
8. Be familiar with hand signals and use them when making turns in heavy traffic areas.
9. Do not hang anything or attach ropes, line, etc. to steering wheel or handle bars.
10. When parked, the hand brake should be locked and engine stopped.
11. Do not ride more people than is designed by the seating capacity.

The utility vehicle has been the mainstay of landscape maintenance procedures over the years. With the adoption of key accessory items that can be easily attached, it has gained a new status of efficiency and importance in today's modern management schemes.

By establishing and utilizing a systematic preventive maintenance program, being trained in the mechanical and physical limitations of specific units and keeping an adequate supply of key parts and special tools, these vehicles will give good performance over the duration of their life expectancy.

If and when problems occur, pleasant and proper communications with the service areas of the distributor and/or manufacturer will, in most experiences, achieve satisfactory solutions. **WTT**