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Get the Most Out of Equipment

Careful maintenance and proper operational practices
can greatly prolong the life span of machinery.



A superintendent who wants to get his money's worth out of present machinery or who plans to buy new mowing equipment, must consider more than just purchase price and repair costs. The actual operating costs of machinery are:

$$\frac{\text{Original cost} + \text{repair cost}}{\text{Time}}$$

Time (the useful life span of equipment) is a key factor in this formula.

The life of any machine can be prolonged with proper care and maintenance. During World War II, for example, cars that would ordinarily have been junked at 30,000 to 35,000 miles were kept in shape for 100,000 miles or more. Careful maintenance made the difference. The same is true of grass-cutting equipment.

Improper care and mainten-

ance of mowing machinery has a snowballing effect on equipment costs. Abuse of equipment not only results in premature replacement, but also increases parts replacements while eating up labor for excessive repairs and money for unproductive "down time."

Surveys show that 42 per cent of all service difficulties are due to trouble caused by lack of ordinary care of equipment. An additional 54 per cent of all service difficulties result from operators who fail to follow operating instructions.

Another common reason for shortened life span and high maintenance costs is the use of a machine for the wrong job. When choosing equipment:

- Consider the terrain to be cut. Is it wooded, rough cutting, hilly or more formal? Decide if a reel or rotary machine is to be purchased,

based on course conditions;

- Consider the size of the area and buy the largest machine that is practical. The job gets done faster—with less man hours. If the machine is to be used for trimming purposes and demands on the mower are not too heavy, a small light-duty machine can be used, but higher maintenance costs on this type of equipment are usually inevitable;

- Look for a simple design. A complicated machine has many moving parts and may have a high maintenance cost. Also it may be difficult to adjust, and an expert may have to be used for repairs;

- Check for construction and durability. The machine should be substantially built, well-braced with good bearings. The side-frames, handles or drawbars

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should be heavy enough to do the job. The bed bars, reels, blades should be rigidly constructed.

To keep the equipment properly serviced, set up systems for handling maintenance and repair. Adequate records are essential. Keep a record of both operation and maintenance. Over a period of years it pays dividends.

Toro Mfg. Corp., for example, has developed a simple form for recording, by machine and operator, such items as: mileage, gas and oil consumption, down hours, service required, replacement parts and labor costs.

At the end of the cutting season, the records will show the number of hours the equipment has been operated, plus the cost of maintenance. This information is invaluable for determining the proper type of unit to use in a given area, the most economical brand of equipment, the good as well as the undesirable equipment operators and methods for improving maintenance practices. Also, records are almost a necessity to properly determine the most economical time to trade in old equipment. They are also the best tool for selling a board of directors on your new equipment needs.

To insure proper maintenance, part of the operator's job should include a daily check of his entire machine. Loose bolts and nuts, if ignored, can cause considerable damage. Holes can become enlarged or elongated due to vibration and cause excessive movement—and eventually the machine will be out of commission. If the machine uses belts, they should be checked for grease, grass and dirt to prevent slippage and excessive wear. Care should be used in adjusting the belt tension. An overly-tight belt puts a strain on bearings and bushings—accelerating wear and necessitating frequent changing of belts and bearings. The belt should be just tight enough for the machine to

operate, but without slipping.

Chains on the machine should be checked for alignment, proper tension and excessive wear. When chains are exposed, greasing or oiling is not recommended. Dust, grit and dirt will adhere to a chain when oiled, acting as a grinding compound, accelerating wear of chains and sprockets. An exposed chain will undoubtedly render longer service if not oiled. A chain which runs in a sealed enclosure should, of course, be run in an oil bath or spray. Exposed chains, which are run dry, should be cleaned frequently in a solvent, dipped in kerosene, and hung to dry.

Mowing machines should be thoroughly cleaned after each day's operation with a low pressure water hose or air hose. When a water hose is used, care should be taken that water does not strike vital engine parts, particularly when hot. It is wise to use a grease gun immediately to force water out of the bearings after the machine has been washed.

Following the final mowing in the fall, each piece of mowing equipment should be thoroughly over-hauled. A full program of complete teardown, inspection and repair should be initiated. Any part of a machine which has doubtful life for the coming season, should be repaired or replaced. Making a thorough repair at your leisure is usually much less costly than having to do it under the pressure of summer grass growth.

Variations in terrain on which the machine is used, the type of lubrication it receives, the correctness of repair, the treatment by the operator, storage, accuracy of records, all have an influence on cost per-machine-per-year and useful life span. However, to get the lowest possible machinery operating costs under the conditions of your course—buy quality equipment, buy the right machine for the right job, operate and maintain it properly, and keep adequate records. □