



*Hand tools should be in an orderly, accessible area with ease of inventory.*

Good golf course management must deal with two inescapable realities daily: labor and equipment. We are concerned here with equipment—its care and maintenance—for a golf course without good equipment is like a sailboat without sails.

As a visitor enters a typical maintenance building he will soon notice its neatness (or lack of it) and its organization. Hand tools that are color-coded are much easier to keep in their proper place and far easier to inventory. Small hand tools such as hammers, wrenches, rules, etc. just seem to disappear unless some systematic control is exercised. The proper tool in its proper place is the mechanic's dream. He soon becomes inefficient if he can't find the item he needs, or if it hasn't been properly cared for.

Transportation and radio communication are also money-savers for golf course operators today. In this time of high labor costs, walking is becoming an expensive exercise. Hand-held radios and automotive transportation for the maintenance crew add to operational efficiency.

**BATTERIES—GO POWER:** Care of rolling equipment grows more sophisticated each year. Top performance demands top maintenance, and most manufacturers make every effort to show how their equipment should be handled. However, maintenance of some small items, such as batteries, all too often is neglected.

## *Maintenance Is a Must*

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Corrosion from a poorly kept battery can cause a short life. Always maintain the proper liquid level, check the battery frame, cable connections and the electrical connection. A battery requires more water when it is being overcharged or when the weather becomes hotter.

It is important to maintain the battery at or near full charge for two reasons. When a battery remains discharged for several weeks, the lead sulfate on the positive and negative plates becomes hard. This is called harmful "sulfation." When recharging is attempted, the hardened lead sulfate remains and prevents the plate from taking a full charge. This lowers the overall electrical capacity of the battery and shortens its life.

There is a second reason for keeping the battery at or near full charge. If this condition is not maintained, the capacity of the battery for cold weather starting is greatly reduced. A fully charged battery at zero degrees F. has only 40 per cent of the capacity it has at 70 degrees F. This is the reason why a weak battery may give fair service during normal weather but fails when the weather turns cold.

Checking the specific gravity, or state of charge of the battery is recommended for every 50 hours of use. The liquid level should be kept above the plates and separators. Charge the battery after each water addition and keep it charged. A fully charged battery will not freeze.

The tools and materials needed to check batteries include:

1. Battery syringe
2. Container of distilled water
3. Battery hydrometer
4. Wrenches that fit the nuts on battery holdown clamp and the nuts on the battery posts.

Battery cells should not be overfilled. This will cause the electrolyte to overflow through the caps onto the top of the battery. As the electrolyte spreads, it may reach the battery terminals and frame and the battery will undergo a slow discharge.

**FIRE EXTINGUISHERS:** One of the least maintained, yet vital pieces of equipment at the maintenance building and on large equipment is a fire extinguisher. Extinguishers usually have one of two problems: either they are not inspected regularly, or they are not available when needed. The large hydraulic fairway unit should have at least a one-quart capacity fire extinguisher attached to it before placing it in service.

The CO<sub>2</sub> fire extinguishers or the dry-powder types are for fires created from gasoline, diesel oil, or hydraulic fluid. To control this type of fire, the smothering technique must be used.

**BELTS:** Do you frequently check belts on the cooling and hydraulic systems of your equipment, or do you simply wait until they break? Most operator manuals recommend belt checks for tightness and condition about once a week. After the initial adjustment, however, further adjustments probably will not be needed for several weeks. Belt replacement will be less frequent if they are checked regularly. V-belts are designed to ride on the sides of the pulley grooves, not on the bottom. As long as they ride on the sides, there is ample friction area to deliver power without the belt being particularly tight. Unfortunately, many operators do not understand this, and frequently they believe the belts are too loose.

Two methods usually are recommended by manufacturers for checking tension of a V-belt. One calls for depressing the belt between the pulleys and measuring the deflection with a ruler. In the second method, a spring scale is used with a recommended pull of about 10 pounds, and then measuring the deflection with a ruler.

**ENGINE FILTERS - WHEEL BEARINGS:** Engine filters are another very important part of the engine often neglected but directly influenced by engine-operating time. Both dry and oil bath air filters are in use today. The air dry type directs the incoming air against a shield causing a cyclone action that carries the

large dirt particles to the opposite end where they are deposited in a dirt cup or dirt unloader. Air then enters the pleated filter element for final cleaning before continuing to the engine.

With increased use of front-mounted loaders, the importance of caring for front wheel bearings has also increased. The fact that servicing wheel bearings is not a frequent requirement makes it all the more important to do it regularly and properly. With proper care, front wheel bearings will last indefinitely. With improper care, they may last less than one season.

To clean wheel bearings, swish the bearing in a cleaning solution of kerosene or diesel fuel. Use a stiff brush to help loosen old grease deposits. Compressed air can be used to dry the bearing, but do not allow the bearing to spin. Spinning a dry bearing causes rapid wear and it may ruin both the rollers and raceways. When packing the bearing with grease, it is important that all parts be covered. The best way to pack a bearing is to place grease in the palm of the hand, pushing the grease into the bearing by pressing the bearing against the palm and rotating it. This works the grease entirely through the bearing and between the rollers.

**IN CONCLUSION:** The equipment used on golf courses today is more sophisticated, and preventive maintenance is essential in order to obtain maximum performance. When your equipment is in top-notch condition, maintenance of the golf course is much more pleasant and satisfactory. Maximum efficiency is also realized from the budget dollar.

*Importance of proper battery maintenance includes battery liquid level.*

