

# 7+ Years of Great Performance from Golf Cart's Batteries...? YES, Here's How to Get It!

By Buddy Burke

Get talking to electric golf cart owners for 10 minutes and they'll tell you all about their battery problems. Whether it's the cost of new batteries, how short the range has become or how much more expensive replacement batteries are even a few years later, every golf cart owner has complaints and is looking for solutions. The problem is "no one solution" fits all cases. Much depends on a number of factors:

## 1. What part of the country do you live in?

Warmer climates mean shorter battery life, no matter what. You can minimize the harmful affects of heat by keeping them fully charged at all times, without overcharging and being sure water levels are above each cell's plates, but not too high to cause overflow during charging or operation. Periodic or automatic, full-time desulfation is one sure way to reduce charge time, ensure a full-charge, especially as batteries grow older. It will also significantly reduce water loss and most importantly, extend their life and performance.

## 2. What about sulfation?

Sulfation is known to be the major cause of early battery failures and loss of power. It's caused by leaving batteries "self-discharged" such as in the off-season. Without the proper maintenance charger used to keep the battery from losing its charge, sulfate will form in as little as a week. Unless it can be safely removed (dissolved), batteries can never again deliver full capacity and will have a shorter life.

## 3. Can you get rid of sulfation before it kills your batteries?

There are several methods used by charger makers to remove sulfate. The oldest method and most common is called "Equalization."\* It can only be performed on wet cell (flooded - filler

caps) batteries, not the newer (and gaining in popularity), sealed AGM types. Most importantly, frequent equalization, although effective in the short run, shortens battery life. Newer methods using high frequency current pulses (not high voltage) can be as effective, without the negatives associated with the older type equalization. Some manufacturers allow (even recommend) their use on sealed AGM type batteries. Look for chargers with built-in desulfator-conditioners that work full-time and automatically while also simultaneously charging.

## 4. How bad is it to run batteries down all the way?

Frequent deep discharges raise havoc with golf cart batteries.\*\* Try to limit the depth of discharge (DoD) to a minimum whenever possible. If you must "push" them to get the desired range, also use a maintenance-type charger capable of more fully charging the batteries than the majority of "stock" O.E. types supplied with your car. Batteries that are not regularly subjected to discharge depths of 50% or greater will perform 25% - 35% longer than those that are.



*Your Golf Cart's Batteries will last longer with a Stock and a Maintenance Charger used together.*

## 5. Does keeping batteries "clean" help them function better and longer?

Dirt on tops of batteries create an electrical "leakage path" drawing off power-capacity from batteries. Brush them off or use a mild solution of baking soda and water. If not

used for more than a few days before recharging, keep a maintenance charger on them to compensate for the self-discharge and any small power loss due to small (hard to see) dirt particles.

## 6. Is testing the Specific Gravity (SG) of the electrolyte fluid very important?

One of the best ways to determine the "health" of batteries is to measure the SG levels in each cell. When batteries are in good shape, the SG readings you will get will be in the range of 1275 (4

balls floating, if ball type hydrometer). In addition all cells will be "even" meaning they all should read the same. If not, those that test lower than rest are "weaker" and will be the first to fail. Try desulfating them as mentioned earlier. If successful, you will see all cells become more "equal" meaning their SG readings will be closer to the same.

## 7. Is testing the voltage total of all batteries in the "string" helpful?

Using a digital voltmeter to determine the "rested" voltage of the entire series-group gives a good indication of whether they are fully, charged, not holding their charge or perhaps not charged enough. Golf cart 6-volt batteries should test, after fully charging and letting rest overnight, at 6.4 volts. If 8-Volt type they should test at 8.5 volts. Thus in a 48-Volt series total voltage should be 51.1 - 51.3 volts. Any reading higher indicates batteries were overcharged. If lower then either they were not fully charged or are not holding their charge.

## 8. Do certain pulse-type maintenance chargers provide a "topping off" charge?

When left on after the "bulk" stock charger shuts off, they ensure batteries are truly fully charged. If they are also a pulse-type, desulfation-type maintenance charger, they likely will continue improving the condition of the battery to the fullest extent possible. Using such chargers when batteries are new gives them their best chance to live long, powerful and trouble-free lives.

## 9. Does keeping tires at correct pressure help battery life?

Proper pressure, use of radial vs. stock bias-ply, using accessories to a minimum, all contribute to less work the batteries need to perform adding to their life and lessening the depth of discharge batteries are subjected to.

\*Requires careful observation during process (lasting as much as four [4] hours) to ensure batteries do not "boil out" their electrolyte water.

\*\*Deep discharges equate to drawing batteries down by more than 50% of their rated capacity. Think of battery capacity as a "Gas Tank" and try not going below half-full.