First, it’s always important to fully charge batteries before putting them back into service. Charging is one of the most important yet most misunderstood components of deep-cycle battery maintenance. Batteries must be fully charged to maximize capacity and life. Without proper charging, deep-cycle batteries will not provide the performance, reliability or the manufacturer’s rated life cycle.

It’s important to remember that not only do batteries discharge during use, they also self-discharge when in storage, especially in hotter climates where they will discharge more quickly. Therefore, fully recharging your batteries after every use, and periodically while in storage, is key to their successful operation and longevity.

Before beginning any charging procedures, always refer to your battery manufacturer’s charging specifications to confirm the proper techniques for your particular golf car batteries. Start by checking that the electrolyte

Continued on page 38
levels in flooded battery cells are acceptable. If the water level is below the plates, you should add enough distilled water so it is just above the surface of the plates, but no more. Remember, this is the only time you should add water before charging. Also, flooded batteries operating in a hot climate may require more frequent watering, so it’s best to check batteries regularly to determine how often they will require battery watering.

Ensure your battery connections are tight and the vents are completely inserted into the battery. Loose connections can result in possible sparks, which can ignite the hydrogen inside the battery if the vents are not completely seated.

Be sure there is adequate ventilation at the location where you’ll be charging batteries.

Since batteries “gas” while charging, good ventilation is very important to avoid gas buildup. Also, never charge a frozen battery and avoid charging in temperatures over 120 degrees F.

In addition, never interrupt a charge cycle unless you are doing “opportunity charging.” Opportunity charging can be used to extend vehicle range when needed and is a short charge given to the batteries in between uses. However, this does not take the place of a daily complete recharge.

When charging flooded batteries, there are several techniques you should follow to ensure success. First, deep-cycle flooded batteries do not have a memory, so it is not necessary to fully discharge the battery after every use.

Deep-cycle flooded batteries must be overcharged to avoid stratification of the electrolyte, which can result in the buildup of sulfates on the battery plates. This should occur with every charge cycle and is normally controlled by the charger. This buildup of sulfates can severely impact battery performance. Stratification occurs when the heavier, denser electrolyte sinks to the bottom of the battery cell.
and collects on the battery plates, causing premature failure of the battery. Trojan also recommends that batteries be equalized every 30 days. Equalization is a prolonged charge cycle that will provide additional mixing and is normally programmed into a charger.

While the use of AGM and gel batteries is less common in electric golf cars, you should be aware that these technologies require different charging parameters. If you do use AGM or gel batteries, it’s important that you never use a charger designed for flooded batteries to charge AGM or gel batteries since these battery technologies are very sensitive to the charging process. Charging of AGM or gel batteries should be done at lower voltages to avoid excessive gassing and battery dry-out. Also, it’s very important that you never equalize AGM or gel batteries.

So how long should batteries be charged? The amount of time it takes to charge your batteries depends on how deeply the batteries have been discharged. Batteries that have been deeply discharged will require longer charging time and those with a shallower discharge will take less time. Typically, batteries discharged at

Continued on page 40
Stratification occurs when denser electrolyte sinks to the bottom of the battery, harming the battery’s plates.

Continued from page 39
50 percent depth of discharge will take six to eight hours to fully recharge. For safety reasons, overall charge time should be limited to 16 hours. Most chargers are programmed with this time limit as a safety feature.

In addition, batteries that are cold before beginning the charging cycle will take longer to charge, while batteries that are warm will take less time. This is not based on ambient temperature, but rather on the temperature of the electrolyte. Batteries that are very warm can deliver greater than 100 percent of the rated capacity, but operating a battery at higher temperatures also will decrease overall battery life.

The importance of adhering to regular battery maintenance and charging schedules cannot be stressed enough. Too often batteries are taken for granted with expectations that they will work anytime, anywhere regardless of whether or not they have been properly maintained throughout their lifecycles. Remember that a battery is only as good as the service it receives, so it is critical that regular maintenance practices be adhered to in order to achieve the highest-rated performance and lifecycle from your batteries.

Please visit Trojan Battery’s website (www.trojanbattery.com/TrojanTips) to view our Trojan Tips video tutorial series, which will provide detailed information on a variety of battery technologies and maintenance practices.

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