

Golf Car Batteries

New Ratings Match Power To Use

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IF GAS RATIONING becomes a reality gasoline powered golf cars and boats will probably be among the early casualties. This could present a very great and expensive problem for golf courses using gasoline powered golf cars. It is causing such courses to take a long and careful look at electric powered golf cars.

Even if gas rationing does escape the scene, courses using gasoline powered golf cars must think twice about the smoke, noise, odor and pollution problems. There is the distinct possibility that anti-smog devices may have to be installed on all gasoline powered golf cars at costs that could run all the way from \$75.00 to \$125.00 per golf car.

Light-weight electric golf cars are now being marketed that will provide 36-54 and even 72 golfing holes on a single battery charge, even on the hilliest and most mountainous golf courses.

Thus, it is becoming more and more important that all personnel having anything to do with golf courses fully understand the golf car battery and its maintenance.

Electric golf cars are now being powered by batteries identified as 75, 88 or 106-minute batteries, instead of the old rating of 180, 195 or 220 ampere-hour batteries. The American Golf Car Manufacturers' Association and Battery Council International have adopted the new rating system.

Generally speaking the 75-minute battery is the equivalent of the old standard 180-amp battery; the 88-minute battery is the equal to a 195-amp battery and the 106-minute battery replaces what was formerly known as a 220-amp battery.

The new rating system will enable golf course personnel to better understand the service they can expect from the batteries being used in their electric golf cars.

A battery is rated by testing with a special battery discharge tester which discharges the battery at a

constant rate of 75 amps. It should be done at a temperature of 80° F. This machine records the elapsed time for the voltage to drop to 5.25V per battery, or 31.5 volts for a set of six batteries. This is not a fully discharged or dead condition, but represents a safe level of discharge which will allow the battery to be recharged and put back into service. Therefore, a battery which can be discharged at a constant rate of 75 amps for 88 minutes before the machine senses a voltage drop to 5.25 volts is known as an 88-minute battery.

Each battery contains approximately 400 cycles of life. If a battery is charged after only 50% of its power has been used (specific gravity of 1.200-1.210) only one-half cycle is removed from its life and the batteries should normally perform for two times 400, or 800 battery charges, before they must be replaced.

The golf car that is operated with batteries at or below the 50% reserve may actually achieve another 18 holes of golf, but can do so only by deep-cycling the batteries and removing the energy four to six times faster. A deep-cycled battery will cost the owner two to three full cycles of the 400-cycle batteries' life and result in having to replace batteries after 166 to 200 battery charges.

It is very important that the golf car you buy must not simply have the capacity of going 36 holes of golf on a single charge. It must have the capacity of going 36 holes of golf without deep-cycling the batteries below the critical 1,200 specific gravity level.

A golf course's net profit picture on golf car rentals will improve considerably if they adopt a policy of retiring a golf car to the car shed for charging when the specific gravity reaches the 50% reserve level of 1,200 specific gravity. **Furthermore, it only costs 13.6 cents worth of electricity to charge a set**

of batteries at the 50% reserve level and it takes 27.1 cents worth of electricity to charge batteries after they have been deep-cycled.

The owner of golf cars will want to know how much current is being drawn from the batteries in each golf car being evaluated. The golf course having a sizeable golf car fleet would find it will pay excellent dividends to own a good ammeter (an instrument for measuring electric current in volume) as well as a sensitive voltmeter. With these two pieces of equipment, each golf car being considered can be tested for power consumption.

Providing you water, charge and care for your batteries properly, a golfer maintenance man should be able to predict how many rounds of golf the golf car will give each day before having to deep-cycle the batteries; how many months of service one can expect from the batteries; approximately what your electrical costs will be for charging the batteries.

The average golf car being operated with full pedal acceleration will draw an average of 75 amps from the batteries and if the batteries last 88 minutes under these conditions they are considered to be 88-minute batteries.

If a heavy golf car operates with a full pedal amperage draw averaging 150 amps (twice the standard draw of 75 amps), an 88-minute battery becomes only a 44-minute battery and will need to be deep-cycled after 22 minutes of full pedal operation.

If a light golf car operates with a full pedal amperage draw averaging only 38 amps (one-half the test draw of 75 amps), an 88-minute battery becomes a 176-minute battery and will need to be deep-cycled only after 88 minutes of full pedal operation.

Amperage draw against a battery will vary depending on the operating weight of the golf car itself, the
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GOLF CAR BATTERIES

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weight of the passengers, the degree of the slopes or hills on the golf course, the efficiency of the transmission, the temperature conditions under which the golf car is operated and the horse power of the motor.

If the average battery has a cost of \$25 and each golf car contains six batteries (\$150 worth of batteries) it obviously can make a great deal of difference in a course's net profit from golf car rentals if one obtains 800 battery charges as against only 200 battery charges and, at the same time, cuts his electricity costs for charging batteries in half.

DON'T BE CHEATED ON BATTERIES

It has been reported in several areas that golf course executives are unknowingly evaluating electric golf cars containing six of the more expensive 106-minute (220-amp) batteries and then getting only 75-minute (180-amp) batteries in the golf cars when they are delivered. This is being done by some golf car salesmen to circumvent the lighter weight of other golf cars and make it appear on testing that their golf car can obtain the necessary distance (minimum of two rounds) between battery charges without deep-cycling the batteries.

Unfortunately, the amperage or rating in minutes is not identified on many batteries. Some of the 88-minute and higher priced 106-minute batteries are packaged in a casing of exactly the same dimensions. **The only sure way to tell the difference is to weigh the batteries.** Both batteries contain 19 plates per cell (57 plates), but the 88-minute battery weighs 598 pounds and the 106-minute battery weighs 65.1 pounds.

Make certain you ask all golf car salesmen to identify what amperage batteries are in the demonstrator golf cars you are evaluating and what amperage their golf car pulls on a level grass surface with an average 360 pounds of passenger weight. Then ask for a guarantee that the test golf car contains the same amperage batteries you expect to pay for and receive when your golf cars are delivered.

If you wanted to buy a boat having a 20 h.p. motor, it wouldn't be fair if one salesman demonstrated his boat equipped with the 20 h.p. motor, but another salesman demonstrated with a more expensive 50 h.p. motor.

Insist on demonstrator golf cars being equipped in exactly the same

way you expect to buy and pay for them. □

PRIVATE vs. CLUB CARS

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proof, corrosion proof and never needs painting.

Many clubs with large golf car fleets hire a maintenance man for about \$6,000.00 to \$7,000.00 per year who maintains that fleet in good working order, paying off in the long run. A golf car that is not out on the course is not producing revenue.

Since the profitability of owning a golf car fleet is evident, how do you go about establishing a fleet, especially if your club now allows individual ownership of golf cars.

If your members now have their own cars, you can purchase the cars from them outright, rent them back to them or use the cars as trade-ins on a new fleet.

Or you can acquire a new fleet outright, and let the individual car owners dispose of their own cars.

And just how does a club acquire a new fleet without a tremendous outlay of capital, capital most clubs just don't have?

It is recommended that a course have one golf car for every eight golfing members. If your membership is 400, that means 50 golf cars at a purchase price of approximately \$75,000.00.

Don't let that figure throw you. There are many ways to acquire that fleet without huge assessments to members and without using capital earmarked for other more critical uses, such as course repairs, new facilities, etc.

For instance, Otis and other golf car companies have worked out multiple ways in which you can acquire cars without capital outlay.

One is a lease program with a purchase option whereby you have a set monthly payment of approximately \$45.00 per car. Compare this investment with the income of \$8.00 per

round, five rounds per week or \$40.00 times 4½ weeks and you have a gross profit for the month of \$130.00. This multiplied by 12, then multiplied by the total number of cars in your fleet comes to a real tidy profit for your club.

Now, this lease program also gives you the right to purchase these cars at any time during the lease. However, why purchase? Upgrade your fleet by phasing out old cars and bringing in new ones on the lease program without increasing your monthly expenses. Two important reasons for upgrading a fleet: 1, you keep your members happy, and 2, you keep your maintenance costs low.

The second plan, becoming more popular with many customers, is the rental participation agreement. A club's responsibility for maintenance is kept to a minimum and there is no investment required. The club's car requirements are based on past history or estimated utilization. The dealer places the fleet at the club and each time the car is rented, the club divides the income with the dealer at a predetermined percentage.

But, remember, the dealer has his capital invested, not the club's. The dealer also provides a back-up "tournament fleet" with pick up and delivery service.

Both leasing and rental present another benefit to the golf club or facility. When introducing an initial fleet, a club may not be sure of just how many cars would be needed. Both a lease or rental program allows for adjustment to the size of the fleet. Therefore, the club is not committing itself to a golf car fleet. Therefore, the club is not committing itself to a golf car fleet which will not be totally operational and therefore, revenue producing.

In the long run, the decision to acquire a golf car fleet must be based on the growth the club or facility hopes to attain. The profit potential from one golf car has already been outlined. The potential from 10 times that many or 100 times that many can spell financial profit for the club willing to take the initial step.

And what club or facility could not use that extra revenue? Aside from cutting members yearly assessments, you could use the added revenue to make that much needed expansion to your present facilities, install golf car pathways, or maybe even build a swimming pool to further enhance your facilities.

Anyway you look at it, the golf club without its own fleet is not on a par with those who have them. □

