



BRIEFS

TRALIES REPLACES MILLER AS CLUB CAR CEO

AUGUSTA, Ga. — Philip J. Tralies has been named president and chief executive officer of Club Car, Inc. Tralies, 55, succeeds Montague Miller who announced his retirement after 14 years with the manufacturer of golf transportation vehicles. Tralies spent 21 years with Textron Inc., the first 14 of which were in the company's E-Z-GO golf car division, where he rose to the position of senior vice president. Subsequently, he spent seven years as president of Textron's Turf Care and Specialty Products division for the Americas.

FLOWTRONEX NAMES OLSON

DALLAS — Flowtronex PSI has named Allen Olson to head up its new fertigation initiative. His responsibilities will include support and sales across North America for the fertilizer injection systems division. Olson, a former superintendent, has owned a fertilizer business and has consulted with industry companies including Flowtronex.



Allen Olson

BASF APPOINTS AUSTIN

RESEARCH TRIANGLE PARK, N.C. — BASF has appointed Charles Austin to the post of senior sales specialist for the turf and ornamental and pest control groups headquartered here. Austin will be responsible for product sales to distributors and end-users in the Southeast.



Charles Austin

CEBECO PROMOTES JOHNSON

HALSEY, Ore. — Cebeco International Seeds has promoted Steve Johnson to director of research. He will manage all aspects of the company's turf and forage grass breeding and development programs. Johnson, who has been with Cebeco since 1989, was previously a senior research scientist for the company.



Steve Johnson

Technological advancements, alternative energy to drive improvements in vehicle efficiency

By ANDREW OVERBECK

While energy costs continue to rise across the country, alternative energy research is coming closer to providing potentially lower-cost, more efficient options for golf course vehicles.

ADD SUN, DOUBLE RANGE

Among the most simplistic alternative energy solutions that exist on the market today is the SunCaddy system from the PowerLight Corp. The company retrofits golf cars, installing solar panels on the roofs that continually replenish the vehicle's battery.

This both lengthens the run time of the golf car and reduces the amount of charge that must be replaced after a day's use, said the company's executive vice president, Dan Shugar. "This doubles the range of the car and extends the life of the battery," he said.

Several courses in Hawaii and California are currently using the SunCaddy and interest has risen due to energy concerns out west. "We have had so many inquiries it has been unbelievable," Shugar said. "We are

bringing on new manufacturing capacity and hiring more engineers and sales representatives to keep up with demand."

The system can be retrofitted onto any golf car and the cost is added onto the car's lease package. "Depending on the area, the extra cost is between \$15 and \$25 a month," said Shugar.

BUILDING A BETTER BATTERY

Metallic Power is currently developing a battery that uses zinc/air technology that packs up to 10 times the energy density of traditional lead acid batteries. The system is quiet and emission free and refuels quickly, using recyclable zinc fuel.

"Theoretically, the zinc/air battery can keep regenerating indefinitely," said Metallic Power spokeswoman Susan Connell.

The company is currently working with the Toro Co. to develop a zinc/air powered triplex greens mower and has worked with Textron to test the system in a Cushman utility vehicle. The zinc/air

Continued on page 26



Astris Energi has retrofitted a golf car to run on hydrogen fuel-cells.

Columbia's ACE EPS car runs 115 miles on single charge in vehicle challenge

By ANDREW OVERBECK

REEDSBURG, Wis. — In a golf car endurance challenge staged in Tucson, Ariz. in April, Columbia ParCar's new ACE EPS model traveled 115 miles on a single charge, out lasting the other vehicles in the test.

Dubbed the "Duel in the Sun" by Columbia, the challenge put the ACE car up against its own standard model car and a 2000 model Club Car. "The Club Car went 62.3 miles and our standard car went 97.6 miles," said president Todd Sauey. "Our EPS car surpassed 100 miles on a single charge."

The duel was arranged after a Club Car dealer ran an ad in the *Saddlebrook Progress* that challenged the ACE system's efficiency claims. Club Car was invited to the test, but declined to attend, said Sauey.

PERMANENT MAGNET TECHNOLOGY

The ACE system was introduced earlier this year by Briggs & Stratton and Columbia ParCar. The motor features permanent magnet technology which

allows it to be 50-percent smaller and 20 pounds lighter than the conventional electric motor. As a result the car is 30 pounds lighter and ten to 15 times more efficient than Columbia's original car.

During the test, the cars were driven around a four-mile loop. Each car was

loaded with 400 pounds and checked by Michael Olson, a Trojan Battery representative, who verified that the batteries were all of equal age, voltage and specific gravity.

After the cars were driven two loops, they rested for 15 minutes before continuing. The test started at 8:15 a.m., and the ACE car did not run out of juice until 10:30 p.m., Sauey said.

CLUB CAR'S REACTION

"Since we are not familiar with the test referenced, we cannot comment on its validity or other claims made by the manufacturer," said Gary Stough, marketing manager for Club Car. "However, we are delighted to be considered the gold standard against which other manufacturers seek to measure up."



The golf cars lined up for the challenge

Yamaha Golf-Car reshuffles top management

By ANDREW OVERBECK

NEWNAN, Ga. — Jim Robinson has stepped down as president of Yamaha Golf-Car Co. as part of the reshuffling of its corporate leadership. Robinson, who was also serving as senior vice president of Yamaha Financial Services, will now concentrate his efforts on that position. Bill Szarowicz has stepped in to run Yamaha Golf-Car.

"Robinson was wearing two hats," said Szarowicz. "He came on 18 months ago to help Yamaha Golf-Car out, but as the business is growing and leasing is becoming such an important issue for all of our divisions, it got to be too much. He will still play an active role on the golf car side because 60 percent of our business is leasing."

Szarowicz comes to Yamaha Golf-Car from 24 years at lawn mower manufacturer Snapper Inc., where he served in every position from sales and marketing to advertising.

"My background is heavy into two-step distribution, and that is exactly what we do here at Yamaha," he said.

GROWING THE COMPANY

Szarowicz comes to Yamaha
Continued on next page

Textron Golf and Turf teams with ProLink

AUGUSTA, Ga. — Textron Golf, Turf & Specialty Products (TGTSP) has announced a strategic alliance with ProLink, a maker of GPS golf course information management systems.

Under the terms of the agreement, ProLink will utilize the E-Z-GO branch network to sell and service GPS systems in the United States and Mexico.

"We see this partnership as an opportunity to enhance our customer support by combining the latest in GPS technology with our golf cars," said TGTSP executive vice president David Rivers.

One of the primary reasons for the strategic alliance is the synergistic applications that complement TGTSP's current and future products. ProLink's core competency focuses on hardware and software technology development. ProLink holds six patents for the use of GPS and has several more patents pending. One of the unique characteristics of ProLink is that all of its technology was developed in-house, allowing for greater control of quality, reliability and time-to-market for new features.

"We have closely monitored the development of this technology since its inception," said L.T. Walden, TGTSP chairman and CEO. "ProLink has clearly set the standard for the GPS industry. It made sense for us to establish a strategic relationship with ProLink."

Headquartered in Tempe, Ariz., ProLink is currently featured at over 120 courses throughout the United States and Japan.

Alternative energy, new technology on the way

Continued from page 24

battery will be available in a portable generator model in about a year and a half, said Connell.

HYDROGEN FUEL CELLS

Astris Energi of Ontario, Canada is working on perfecting light-duty hydrogen fuel cells and has introduced a fuel-cell powered golf car prototype to demonstrate its technology.

According to company vice president Gordon Emerson, the car can operate for two to three days under normal use. Refueling from a bulk tank takes 30 seconds and costs around \$3. The fuel cell unit was placed in the battery compartment of a stock E-Z-GO golf car.

"There are no emissions and it

is silent," said Emerson. "The only effluent is distilled water. The car is just as powerful as an electric powered car.

"We are not in the golf car business," he continued. "We built the car as a demonstration unit. However, I think this could potentially enter the market based on the conversations we are having now with

manufacturers. The energy situation has stimulated that demand."

Emerson said the technology is at least one year away from the market and in the meantime the company is going to work on developing a more powerful bipolar fuel cell. "This new cell will become the standard system," he said. "It is more efficient while doubling the energy output."



One of many Super Chargers being used at the Sun Ridge Canyon community in Fountain Hills, Calif.

SUPER CHARGER

Another option being developed by Electric Transportation Engineering Corp. is a fast-charging system that can restore 85 percent of a battery's power in 15 minutes. The company's level-three charger is used primarily in airports to charge people movers but has been introduced to two golf communities this year to "fast-charge" members' personal golf cars.

While these high-powered units cost \$150,000 and would not be appropriate for charging a golf car fleet, national accounts manager Mark Carman said the company is working on a smaller scale model for golf courses.

"The 15kw Super Charger will draw 100 amps, but will only cost \$15,000," said Carman. "If you have four of these you could recharge your fleet when it is hooked up sequentially. Charging four cars at a time, you would draw only 400 amps. This will protect courses from spiking electricity rates."

EVALUATING NEW TECHNOLOGY

Golf car manufacturers are currently evaluating methods of improving vehicle efficiency, but must constantly weigh improvements with product costs.

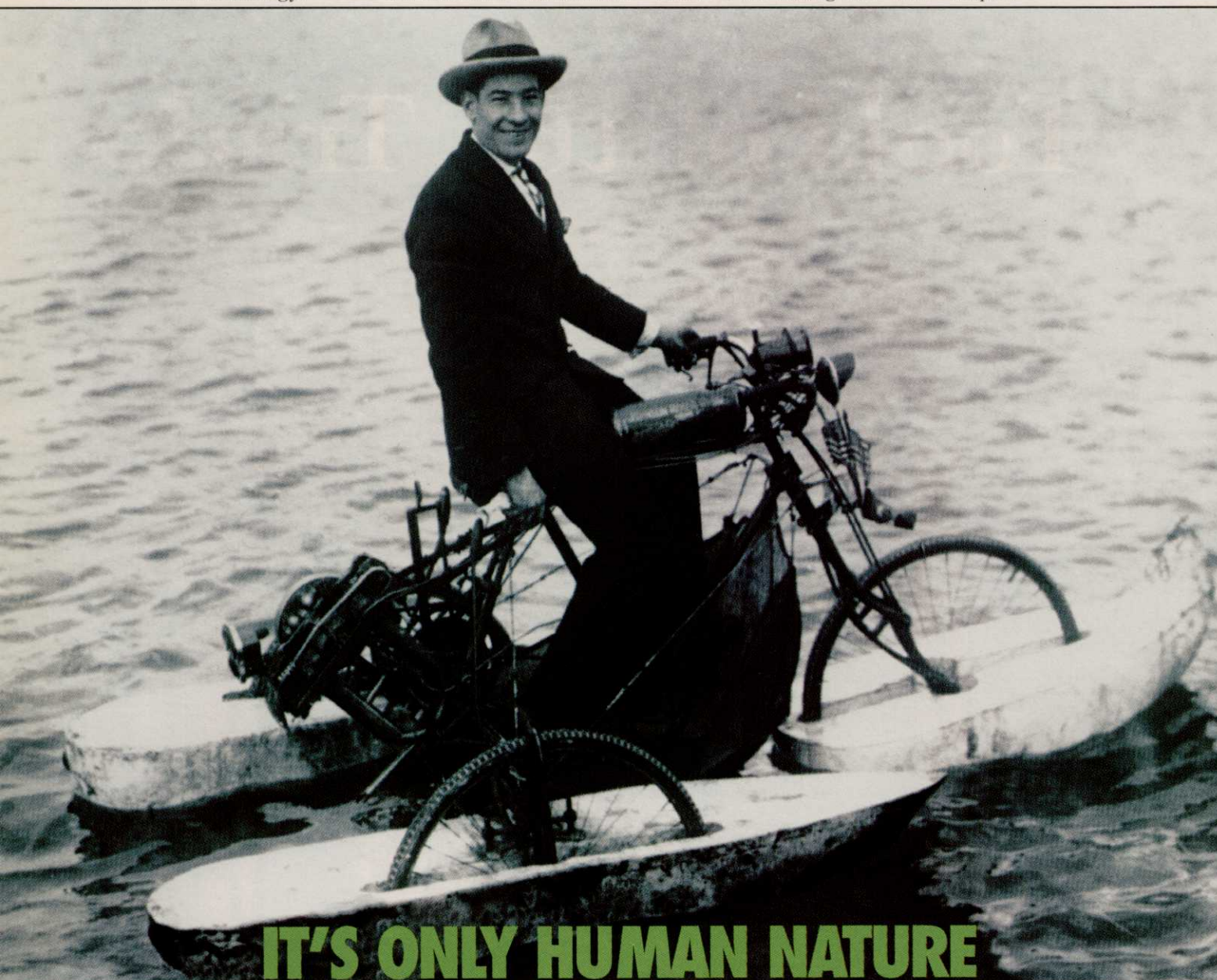
"The energy situation has accelerated our interest in all the technologies and alternative fuel cells, but it has not prompted us to make a dramatic change in our product road," said Club Car marketing manager Gary Stough. "You have to also balance cost. I don't know of a supplier right now that is looking to put more cost into their products."

Testing of new technology is a priority, said Yamaha Golf Car's vice president Bill Szarowicz. "We are always working on making cars more efficient and cost effective for the user," he said. "But you need 18 to 24 months' lead time because it needs to be tested to make sure that it works in all conditions."

Szarowicz said Yamaha is evaluating a number of options right now.

"We have some untapped technology right now that can play right into the energy crisis situation," he said. "We have to evaluate and test these options. Those who aren't conscience of energy demands will fall behind." ■

GOLF COURSE NEWS



IT'S ONLY HUMAN NATURE TO WANT THE BEST OF BOTH WORLDS.

Apply MACH 2® Turf Insecticide once before egg-hatch to prevent grubs all season long. Or apply shortly after egg-hatch to cure grubs up through the second instar. Make the choice that suits your schedule and resource availability. MACH 2 also controls key lepidoptera, such as cutworms, armyworms and sod webworms, making it one of the most versatile turf insecticides on the market.

And don't worry about watering MACH 2 in immediately. Unlike other products, MACH 2 can wait 2 weeks or more for you—or mother nature—to water it in without degradation of the active ingredient.

Prevent or cure with season-long control. Unmatched irrigation flexibility. Effective grub and lep control with an award-winning environmental profile. Only MACH 2 truly gives you the best of all possible worlds.

For more information, call 1-888-764-6432 ext. R3107, or visit our website at www.mach-2.com.

MACH 2
TURF INSECTICIDE

IT'S ALL YOU NEED TO PREVENT OR CURE.

PRESIDENTIAL GREEN CHEMISTRY CHALLENGE WINNER