

## BRIEFS

### OTTERBINE BAREBO APPOINTS BAREBO

EMMAUS, Pa. — Otterbine Barebo Inc., has appointed Chris Barebo as the company's new president. Barebo started with Otterbine in 1980 and became vice president of manufacturing in 1988. During 2001, he will oversee the manufacturing and introduction of the company's new aerating fountain line that was released in March.



Chris Barebo

### RAIN BIRD SENDS UP DONOGHUE, LIRON

AZUSA, Calif. — Rain Bird has promoted Mike Donoghue to the position of vice president, golf irrigation and support operations. In his new role, Donoghue will be responsible for the company's golf irrigation operations. He will also manage the electronic manufacturing facility in Tijuana, Mexico, and oversee distribution centers in Azusa and Calera, Ala. Most recently, Donoghue served as the director of the golf division. Mindy Liron will replace Donoghue as director of the golf division. In her new role, she will oversee all manufacturing, engineering, customer service and marketing. Liron was formerly director of support operations.



Mike Donoghue

### JACKLIN SEED NAMES UNDERWOOD

BOISE, Idaho — Jacklin Seed has named Rich Underwood to manage its new Albany, Ore. seed blending and warehousing facility. Underwood has more than 20 years of experience in the seed industry and most recently served as president of Halsey, Ore.-based Cebeco International Seeds.



Rich Underwood

### O'DONNELL JOINS PATTEN SEED

LAKELAND, Ga. — Patten Seed Co. has appointed Joe O'Donnell to serve as vice president of Georgia Super Sod Outlets. O'Donnell most recently served as general manager of Sunbelt Seeds.

## ParCar, Briggs & Stratton unveil revolutionary electric motor system

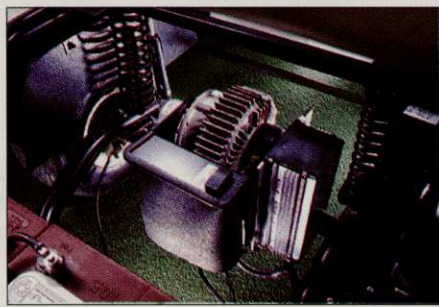
By ANDREW OVERBECK

REEDSBURG, Wis. — In a unique joint venture agreement with Briggs & Stratton, Columbia ParCar Corp. has unveiled its new, more efficient ACE Electromotive Power System in select golf car and utility vehicle models.

The new cars use Briggs & Stratton's new Etek electric motor system that utilizes neodymium permanent magnet technology allowing for a motor that is 50 percent smaller and 20 pounds lighter. As a result, the new ACE EPS 48v Electric Eagle golf car is 10 to 15 percent more efficient and 30 pounds lighter.

"By utilizing a permanent magnet, there is no need to use battery energy to generate a magnetic field," said Ward Utterback, ParCar's manager of sales and marketing support. "The power is used more efficiently, significantly reducing heat energy loss, thus providing more energy for motion."

According to Utterback, the new car's efficiencies will add up to cost savings. "You can get more rounds of golf per car, spend less time charging and save electricity," he said. "In addition you can control speed with the accelerator, leading to less brake wear."



The Etek motor uses a permanent magnet.

### A FIRST FOR BRIGGS & STRATTON

Sensing a market shift towards electric power sources, Briggs & Stratton, which makes 11 million gasoline engines a year, saw a need to diversify into making electric motors.

"If things keep going electric, like they have in golf cars, we need to get involved in electric motors," said John Fiorenza, director of business development for Briggs & Stratton.

Briggs & Stratton, which has been developing the permanent magnet system for the past five years and holds a patent on the motor, formed a joint venture with ParCar to get the motor

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## Davey Golf rolls out laser mapping technology

By ANDREW OVERBECK

DALLAS, Texas — Davey Golf has teamed up with Aerotec LLC to provide a high tech alternative to conventional aerial topographic maps. LiDAR mapping technology, which is used primarily for mapping cellular sites and power transmission lines, was developed by NASA and later used by the U.S. military during the Gulf War for missile guidance systems.

Aerotec is one of the commercial suppliers of the technology and is offering LiDAR mapping services exclusively through Davey Golf.

### DALLAS NATIONAL

The system, which is faster, more accurate and less expensive than conventional mapping technologies, was introduced to the golf course industry at Dallas National Golf Club, which is currently being developed by TSC Golf.

"The developers needed a topographic map of the site," said Jack Swayze of Davey Golf, a division of the Davey Tree Expert Co. "They had tried conventional survey methods, which were becoming time-consuming and expensive because of the site's size and vegetation."

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LiDAR mapping generates detailed topographic maps using lasers (above) attached to a helicopter deployment platform (inset).

## Royster-Clark to acquire ProSource One

MEMPHIS, Tenn. — Royster-Clark Group has signed a non-binding letter of intent with Agrilience LLC to acquire the assets of ProSource One and its parent company, Agro Distribution South. Terms of the transaction, which at press time was expected to close March 31, were not disclosed.

The businesses being acquired by Royster-Clark, a leading agricultural supplier of fertilizer, seed and crop protection products, have been operated by Agrilience since their purchase from Terra Industries in 1999. Together they employ approximately 1,100 people.

### ENTERING THE GREEN INDUSTRY

The acquisition gives Royster-Clark, which has 350 retail outlets and numerous production and distribution points across the eastern United States, an instant entry into the green industry.

"The acquisition of Agro Distribution South and ProSource One fits into our long-term growth strategy," said

Francis P. Jenkins, chairman and CEO of Royster-Clark. "We are particularly excited about the acquisition of ProSource One, which brings us the experience and knowledge that we need to effectively expand our presence in the extremely important mar-

kets that they serve."

### EXPANDING PROSOURCE ONE'S REACH

The deal will also allow ProSource to expand into North and South Carolina and Virginia. "These are areas that we have been eyeing for the last five years," said Bob Lee, director of ProSource One. "They have established locations we can work through and that expands our reach."

The combined company will also have a strong hold on the Florida market, according to Lee. "This will make Royster-Clark one of the largest suppliers of plant nutrients, seed and crop protection products in both the professional and specialty ag markets in Florida," he said.



## IntraSearch creates golf mapping arm

DENVER — IntraSearch Inc., an aerial mapping and digital imaging company, has formed a sports mapping division in response to its growing client base of golf courses and other professional sports venues.

Littleton, Colo.-based GroundLinkx LLC and Bordentown, N.J.-based Mapping Events & Associates LLC join the new division as affiliate companies. GroundLinkx is a developer of customized Geographic Information System (GIS) programs for golf course maintenance, and Mapping Events is a provider of site-planning services and GIS program training for event organizers.

"The sports mapping division allows us to consolidate the individual strengths and industry recognition of all three companies into a one-stop mapping and GIS source for golf courses and sports organizations," said Michael Platt, IntraSearch president.

The new division will package its high-resolution aerial mapping and 3D topographic imagery of sports and entertainment venues with GroundLinkx geographic information/site-analysis programs.



## LiDAR mapping

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With LiDAR we were able to map the site in a more time-efficient and cost-effective manner."

TSC's construction coordinator Tom Mead said he would definitely use LiDAR mapping again. "Typically, aerial photographs are used to make the maps. We had already flown the

property but because of the vegetation we could not get accurate readings with that technology," he said. "The LiDAR was extremely accurate even with the thick vegetation."

### HOW DOES LIDAR WORK?

"LiDAR takes GPS to the next level because it integrates GPS with inertial navigation systems," said Aerotec CEO Jim Dow.

LiDAR, which stands for light

detection and ranging, combines a powerful laser sensor with a Global Positioning System (GPS) receiver, inertial GPS unit, a custom pilot navigation system and a helicopter deployment platform to provide precise 3-D coordinate point data.

From above, the laser that is mounted to the underside of the helicopter emits rapid pulses of near-infrared light. The time it

takes the laser light to conflict with any feature is measured and converted into a point location, thus mapping the site in X, Y and Z coordinates. The system is only limited by rain, snow or ice and can map terrain, topographic features and vegetation.

"Using LiDAR, as many as 35,000 points can be captured every second," said Greg Ina, manager of computer sciences for

Davey Resource Group. "The speed at which LiDAR data is captured allows for the compression of project timelines originally estimated for conventional surveys. The data are then used to create a topographical map of the site. Developers and architects are able to see even the smallest details."

Ina said the high volume of laser light data allows the terrain to be surveyed even through dense vegetation. "LiDAR data penetrates dense vegetation through volumes of laser light emissions," he said. "Up to 35,000 pulses of laser light can be released per second from a laser scan survey unit. Although leaves and tree branches conflict with the laser light path and the ground, the sheer density of information ensures coverage

*'Up to 35,000 pulses of laser light can be released per second from a laser scan survey unit.'*

— Greg Ina

through vegetation. Employing laser scan data involves supervised and unsupervised data classification algorithms, the process always involves the elimination of unwanted data."

### TIME IS MONEY

Using LiDAR, the data to map the Texas site was collected in approximately 11 minutes. "When you factor in air time, the whole process takes only half a day," said Dow.

The results are provided to the client rapidly. "From the time we ordered the service to the time we had our maps, it took three weeks," said Mead.

The Aerotec team consists of a helicopter with a two-man crew in addition to two on the ground who record GPS point data. The mapping at Dallas National cost about \$25,000, said Swayze. Cost varies depending on the size and the shape of the site.

In addition, LiDAR surveys offer accuracy that is beneficial at each stage of development and course maintenance. The results are in electronic format and are Geographic Information System-ready and can be re-used for future projects.

"Because the topo can be overlaid with the ortho-photos, the golf architects have a visual representation of the terrain," Swayze said. "With LiDAR, architects can see the features right in the topography, so they can choose to incorporate the features into the design of the course. These features can also be rendered into 3-D models for visualization purposes." ■

Jennifer Lennox, communications specialist with Davey Tree Expert Co., contributed to this article.

GOLF COURSE NEWS

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