GOLF COURSE NEWS

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Organic Golf

No Mas, No Mess



THE DYNAMIC DUO OF PINEHURST NO. 2 PINEHURST, N.C. — Paul Jett, No. 2 Course superintendent (left), and Bradley Kocher, director of golf course maintenance, have kept cool heads in their preparation for this year's U.S. Open. See Super Focus, page 13.

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SUPPLIER BUSINESS

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Ojai reclaims one of world's best par-3s

OJAI, Calif. — An ambitious project to renovate Ojai Valley Inn & Spa's George C. Thomas-

designed course will return two signature holes that have been "lost" for over a half-century, including one which was hailed as one of the world's best par-3s.

"We have an extraordinary opportunity to preserve a piece of history," said the inn's director of golf, Mark Greenslit. "Our classic course is reclaiming two of its most unique and beautiful holes."

The terrain of these two holes is so spectacular that PGA Tour great, historian and course designer Ben Crenshaw said, "This shot is going to be once again one of the best shots in golf."

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W TECHNOLOGIES

Fully autonomous, 'intelligent' mower tackles turf in Fla.

By ANDREW OVERBECK

JACKSONVILLE, Fla. — Engineers at the University of Florida's Mechanical Engineering School have developed a fully automated robotic fairway mower that may very well revolutionize golf course maintenance. The unit,

which utilizes a Global Positioning System (GPS), sonar sensors and five onboard pentium computers is truly a "smart mower," according to engineer David Armstrong.

"This has a large platform with a lot of intelligence," said Armstrong. "I've taken it out and let it run for three or four hours and it stays within an inch or two of where we want it to be." Continued on page 49



10 YEARS LATER GCN CONTINUES TO SET THE PACE

YARMOUTH, Maine — From a small town in coastal Maine, Golf Course News has helped set the pace of the golf course industry for the past 10 years. In a special 14-page section, some of the industry's best and brightest weigh in to put the past decade into perspective and share their visions from golf's crystal ball. Above, a copy of GCN's premier issue, February 1989.

SunCor on fire in the Southwest

By PETER BLAIS

PHOENIX — Things are heating up here in the Valley of the Sun for SunCor

Resort & Golf Management Inc. The Phoenix-based

subsidiary of SunCor Development Co. is building 45 holes of golf in the Phoenix area, 18 in St. George, Utah, and operating another 108 holes scattered between four greater Phoenix-area properties. Among the properties under

Construction are: • A Hale Irwin-designed 18-hole executive course called The Lakes Course and a nine-hole pitch 'n putt layout across Litchfield Road from the Art Hills-designed Palm Valley Golf Club, which SunCor

Continued on page 46



MILLER/GRAVES & PASCUZZO COMBINE EFFORTS AT THE BRIDGES SAN RAMON, Calif. — The Bridges at Gale Ranch, a daily-fee golf course designed by Johnny Miller Design and Graves & Pascuzzo Limited, has taken a step closer to opening with the recent hiring of superintendent Mike Orren. Inspired by Royal Dornoch in Scotland, the course features a 16,000square-foot, three-tiered green. Pictured above is the 13th green. The course is due to open late fall.

SUPPLIER BUSINESS



With a fully functional prototype (above), Armstrong's next move is to attract companies like Toro and John Deere to integrate the robotic systems with existing fairway mower models.

at 4 a.m. and mow the whole

golf course.'

'Intelligent' mower

Continued from page 1

The robotic mower can be used in two ways.

The superintendent first drives the unit around the perimeter of a fairway to record the corner points. From there, on-board computers automatically generate a sweep pattern to cover the area. The superintendent can then specify the spacing

of the rows and the mower will "remember" the settings and follow the exact path each time.

The unit can also be programmed in a more specified manner. A superintendent can mow an entire fairway and program the mower to remember and follow his exact path from then on.

The system's five computers run a number of different functions allowing for a high degree of autonomy.

One computer controls the motor, steering, throttle, brake and shifter. The second controls the GPS system which is integrated with an inertial navigation system allowing it to maintain its' position when the unit is under trees or in a tunnel.

The third computer runs the detection mapping system which uses sonar to detect obstacles.

The fourth computer runs a path planner, and the fifth unit integrates all of the above functions using an autonomous control unit to drive the vehicle.

Armstrong has mounted the unit, which is about half the size of a refrigerator, on the back of a Kawasaki Mule that pulls a three-gang reel mower. He has been working closely with superintendent Barry Greenwalt at Ironwood Golf Club in Jacksonville to test the unit on one of their fairways.

"It performed great," said Greenwalt. "It is an amazing machine, if players are in front of it, it will stop and let them play through and then move on after they are gone."

With a fully functional prototype,

The se mowers that could go out the size and price. The se mowers that could go out the size and price. The se mowers that could go out the size and price. The se mowers that could go out the size and price. The se mowers that could go out the size and price. The se mowers that could go out the size and price. The se moment of the set o

Armstrong's next move is to attract com-

panies like Toro and John Deere to inte-

grate the robotic systems with existing

-David Armstrong end of the year the cost will be around "remem- \$50,000 and eventually down to around the exact the \$15,000 range.

prototype cost

\$350,000, but he

thinks that by the

"We envision a club that would have an automated team of these mowers that could go out at 4 a.m. and mow the whole golf course," said Armstrong.

PowerLight

Continued from page 47

According to Shugar, the SolarCady provides three distinct advantages. First, the car has increased range. While a standard electric car can maybe go for two rounds, the SolarCady can go for three and perhaps four rounds depending on the level of sunlight.

"It's phenomenal," said Neil "Buster" Bustermante, general manager at the Mauna Lani Resort. "There are days where we will rent the car out and it will go for four rounds without using the battery at all."

Furthermore, re-charge times are cut in half, minimizing recharge costs.

The SolarCady also doubles the car's battery life. "Most courses rotate their cars every five years, but they wind up having to buy a battery after just two or three years," said Shugar. "With the SolarCady, they never have to buy new batteries."

At an average cost of \$400 per battery, that would save Mauna Lani around \$72,000 over a five year period. For that reason, Mauna Lani and PowerLight are currently working on a lease agreement to retro-fit all 180 of the resort's cars.

While PowerLight is working with golf car manufacturers to integrate SolarCady, it is currently installing the system strictly as a retro-fit option. The company leases the SolarCady for \$14 to \$24 a month.

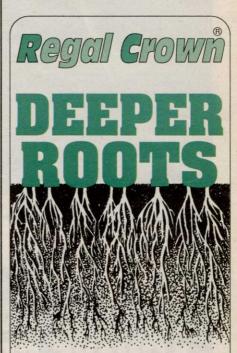
PowerLight plans to install SolarCady in golf cars at a number of clubs across the U.S. by the end of the year.

Deere/Utility Continued from page 47

and to extending our leadership position," Rostvold said. "One of our first initiatives is to introduce a new, larger and more powerful Gator that will appeal to new markets."

David Larson, vehicle group manager, said that the company intends to break ground for the new complex within the next few weeks, with the plant on line by summer of 2000.

"The new plant will allow us to meet current and future demand for Gators and to design and manufacture new vehicle lines to respond to the needs of our customers," Larson said.



MINIMIZE DRY WILT AND WINTER DESICCATION

Golf Course Superintendents, Turf Grass Managers, Sod Grass Growers and Nurserymen are praising the results of Regal Crown.

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