

To Infinity and Beyond

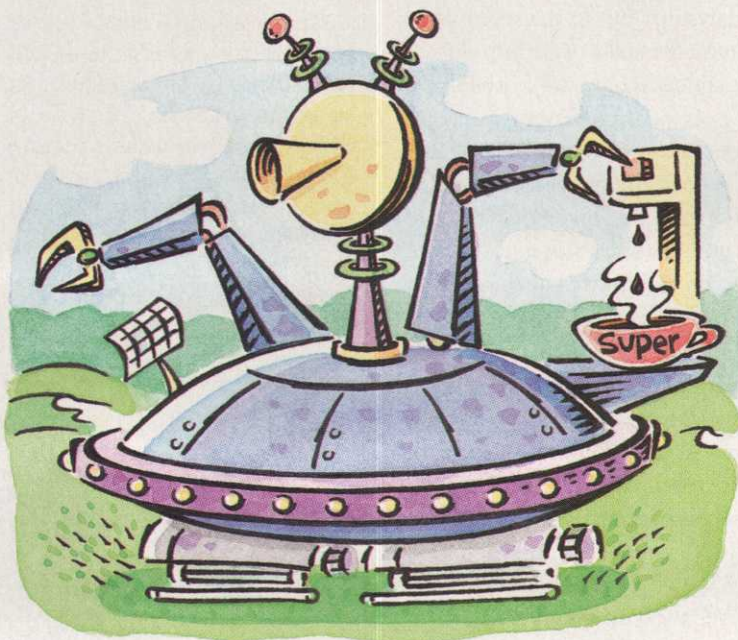
High-tech features top the list of what superintendents expect from tomorrow's greens mowers

BY FRANK H. ANDORKA JR.,
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In a country where Buck Rogers and Captain Kirk fueled expectations of what technological advances future centuries might hold, it's no surprise that superintendents expect greens mowers in the 21st century to follow a similar path.

Superintendents want future mowers to cut with lasers, be controlled by satellites and fix themselves. Heck, one superintendent even wants his greens mower to *make coffee* for him in the morning.

While the coffee idea might be a



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stretch, the rest of the high-tech gadgets superintendents expect to see on greens mowers might not be so pie in the sky. Companies are conducting intense research into alternative power supplies, disease-sensing monitors and the possibility of integrating mower controls with the Global Positioning System (GPS).

Experts say the real question is not *if* these innovations are possible, but *when* will superintendents be able to start using them.

Helmut Ullrich, marketing manager for Toro's Greensmasters line of mowers, says one superintendent with whom he spoke described the perfect mower of the future.

"He said the perfect greens mower should be a solar-powered hovercraft with

a laser that will cut the grass to the ideal height to get the most speed on the greens," Ullrich says. "We're not quite to that point, but we're definitely making strides on a lot of fronts."

Ullrich says mowers in the new century will probably move from fixed cutting decks to flexible ones, and he said mowers will have narrower profiles as well. Those adjustments will help superintendents mow at lower heights because the machines will hug the contours of the greens more closely. It's the same theory that propels most razor innovations — the closer the blade hugs the surface, the closer the cut.

Mowers will also become more operator friendly, a factor that's increasingly important in a world of frequent employee

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turnover, Ullrich says. "We want to create a mower where the operator can diagnose problems and fix them, possibly without a mechanic," Ullrich says.

Corey Eastwood, CGCS of Stockton Golf & CC in Stockton, Calif., says he's not as convinced as other superintendents that mowers powered by GPS — a government network of 24 satellites orbiting the earth that tracks the location of moving objects on the ground — will work. "I can't believe you can take the human element out of this job," he says.

Still, integrating mowers into GPS is something all companies are exploring. Chuck Greif, manager of worldwide golf and turf market development for John Deere Co., says such robotic mowers are about 10 years away, but it's not for a lack of trying. Computer technology will have a great impact on how mowers of the future will operate.

Not only will mowers cut grass without operators, but they will also have a feature called parallel tracking which will guarantee straight lines on the greens, Greif says. It would allow superintendents to mow greens by remote late at night, know-

ing that they won't be destroyed in the process.

Mowers will also include sensors to track fungal development and nutrient levels on greens. Combined with the latest computer technology, these mowers will transmit such data to superintendents,



allowing them to adjust pesticide and fertilization plans accordingly, Greif says.

Greif adds that the speed of the roll-outs depends on how many industries can work together to develop new technologies. For example, alternative power sources that can also be applied to the auto industry will reach the market faster than optical disease sensors. "A lot of the technology to do these things exists now," Greif says.

"You have to balance the costs of how

much it will take to bring a feature to market with how much the market will be willing to pay," Greif says. "Otherwise, your investment won't pay off."

Electric greens mowers with the same capabilities of current hydraulic mowers will become available soon, says Peter Whurr, vice president of product management for Textron Turf Care And Specialty Products. These new engines will address pollution issues and reduce noise.

"Alterations to the machine will allow for less noise and meet the ever-demanding emission standards put forward by legislative bodies across the land," Whurr says. "A gradual process of evolution is to be expected, but we're getting there."

Robert Maibusch, CGCS at Hindsdale GC in Clarendon Hills, Ill., says he's excited about everything he has heard about the new fuel cells for greens mowers.

"That would help superintendents located in environmentally sensitive areas," Maibusch says. "It would eliminate the noise and pollution problems, which are big issues in a lot of areas."

Whurr says future mowers will help superintendents save money on fuel costs, as well as being lower maintenance. Greg O'Heron, superintendent at Peterborough Golf & CC in Peterborough, Ontario, hopes it will happen soon.

"My ideal mower will provide maintenance-free onboard diagnostics and repair," O'Heron says. "Any repairs that are made will be transmitted to a central database so we can keep track of all the repairs done to the mowers."

John Deere's Greif and Toro's Ullrich believe that, with the exception of the electric power sources, it may be five to 10 years before superintendents see all the high-tech gadgets they want. And despite these advances, however, they shouldn't expect greens mowers to look like spaceships anytime soon, Textron's Whurr says.

"The machine's appearance will not change significantly," Whurr says. "Any changes to greens mowers should enhance the machinery to meet the ever-changing needs of the superintendents." ■

Boundless Possibilities

Golfdom asked some superintendents to build the greens mower of the future. Here's a sampling of their responses:

In the near future, greens mower technology will find all mowers (both triplex and walkers) will be electric without a significant weight increase. They will design frames and bed knives to be thin enough to cut at below one-tenth of an inch without dragging on the green or forcing the mechanic to grind off the faces. Mowers will be able to calculate green speeds and adjust the cut

as necessary to create uniformity throughout. Mowers will contain moisture and disease sensing or monitoring detection systems that will send alerts (and pinpoint the area) to superintendents' hand-held computers. In spite of all this oncoming technology it still won't replace us because golfers don't want to complain to a machine.

Walter Montross
CGCS, Westwood CC
Vienna, Va.

I'd love to see battery-powered, self-propelled walk-behind mowers that would be quieter than

today's combustion engine mowers. I'd also love to have a computerized mower that you could program the night before to mow all 18 greens before the start of play the next day.

Mike Yenny
Superintendent, Mayfield CC
South Euclid, Ohio

The ideal mower would be electric so there would be no oil leaks. The reels would sharpen themselves while mowing. There would be sensors so the lines would always be straight.

Jim Nicol
CGCS, Hazeltine National GC
Chaska, Minn.