



Turf equipment mechanic Andy Bates checks the switches on an electrically operated control he installed to update a turf sprayer. Photo courtesy: Alan Ginsburg.

SUNY Cobleskill's Turf Equipment Program

By Alan Ginsburg

Turf equipment mechanic Andy Bates checks the switches on a TeeJet sprayer control he installed to update an old Agrotec turf sprayer. The sprayer, mounted on the back of a Cushman truckster, was operated by a rope attached to a valve. Now the sprayer booms can be electrically controlled, either separately or together, similar to mechanisms found on the latest turf equipment.

Bates also installed a tachometer on the truckster to gauge speed to determine amounts of fertilizer chemicals to be sprayed on the turf.

Whether he's updating equipment, repairing or replacing worn parts, or troubleshooting mechanical problems, Bates, who's a mechanic at Leatherstocking Golf Course in Cooperstown, NY, is applying skills he learned at the State University of New York College of Agriculture and Technology, where he completed his associate's degree in agricultural equipment technology. As a mechanic on a golf course, he plays a key role in ensuring quality turf by keeping equipment used to maintain fairways and greens in excellent working condition.

"It's real important to have a good mechanic here," says Leatherstocking Assistant Superintendent Bernie Banas. "Andy is great at troubleshooting problems with any of the equipment. If the machines aren't working right, it's going to reflect on the overall condition of the course. And manpower is wasted if equipment is waiting to be fixed. A mechanic who has a good preventative maintenance program reduces downtime on machinery."

Good Mechanics Are Hard to Find

Banas notes there are few schools that train mechanics for the golf or sports turf industry because it requires such a variety of skills, from reel grinding to a knowledge of hydraulic systems and diesel engines, and it's a field that's becoming more high tech.

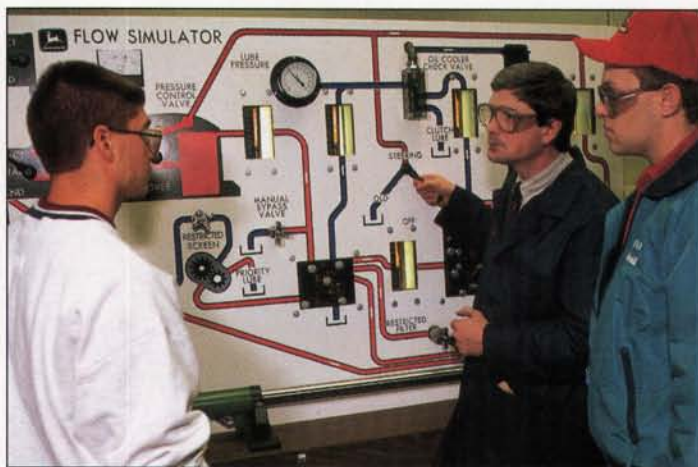
Mark Michaud, superintendent at Pebble Beach Golf Links in Pebble Beach, CA, agrees. "I consider my mechanic one of the top five most valuable people on our crew, because in a nutshell your course only looks as good as your equipment runs," he says. "It requires a specialized type of skill to be a mechanic on a golf course, since golf course equipment is precision machinery and unlike any other type of equipment a mechanic would maintain."

Yet there's a shortage of mechanics trained in the technology to repair the latest sports turf and grounds-care equipment, golf course superintendents around the country say.

"A good mechanic on a golf course is hard to find," says Joseph Hahn, superintendent at Oak Hill Country Club, Rochester, NY. "I have a super mechanic now and a good assistant mechanic, but it took me about eight years to get that into place, just by trying different people and finally getting the right ones."



Professor Larry VanDeValk (right) shows grinding angles on a reel-unit training aid to students Greg Bernoi and Dan Gross. Photo courtesy: Larry Abrams.



Professor Mike McCaskey (center) explains hydraulic principles on a John Deere training aid to students Mark Dailey and William Saine. Photo courtesy: Larry Abrams.

Says Hahn: "There is a real need for qualified mechanics to service golf course equipment, people trained in mower sharpening, adjusting, maintaining the mowing units themselves. But also they need a knowledge of diesel engines and hydraulics, and now an understanding of computer diagnostics. So a lot of the mechanics already in the field will need more training, and the new ones will need a lot more training than they did in the past."

Steve Lucas, president and founder of the New England Chapter of the Golf Course Mechanics Association, based in Weston, MA, says the demand for well-trained mechanics to service golf course and sports turf equipment has been increasing rapidly over the last few years, especially as the equipment becomes more sophisticated.

"I have never seen so many job openings and so few mechanics," says Lucas, equipment technician at Weston Golf Club. "We've heard of anywhere from three to five openings almost consistently since last fall. Right now there are three openings for mechanics at golf courses in the New England and New York area and no one to fill those positions."

Lucas attributes the shortage of mechanics to a lack of adequate technical training necessary to service and maintain the latest turf machinery. "The technical aspects of this industry are changing every year. The equipment is getting more computerized, more versatile in hydraulics and electronics. So you can't just be your average auto mechanic today or small engine mechanic and just do it. The equipment is just as sophisticated as systems on today's automobiles, and the technical advancements are just overwhelming. There's been a vast change in the industry in the last eight to ten years."

Supplying Demand

To meet the demand for qualified mechanics, SUNY Cobleskill has updated its equipment technology curriculum and is now offering an associate's degree with a major in turf and grounds-care equipment technology.

Lawrence VanDeValk, assistant professor of agricultural engineering, who coordinates the program, says the college gets a couple of dozen calls a year from golf course superintendents and grounds-care firms seeking mechanics to fill vacancies.

"We used to do quite a bit of lawn mower consumer-product type work in the program, but we're shying away from that and leaning more toward the commercial products which are more high tech," he says, especially since "there's more demand for our graduates in this area."

Besides courses in diesel engine repair, hydraulics and electrical systems, he says, students will be required to take turf management courses, horticultural machinery, small engine repair and diagnostics and welding, along with courses in the liberal arts and sciences.

"For years, the types of equipment used on golf courses were very similar to what you would buy at a lawn and garden dealership, very simple straightforward units, and pretty much anyone who has torn apart lawn mowers in his garage can grow up to fix that type of equipment," says VanDeValk. However, he adds, "What's changed in the last ten years in the industry is that the value and complexity of equipment used on golf courses has grown astronomically."

"It's not uncommon to run into a lawn mower used on a golf course now that costs \$60,000. A Toro Groundmaster is about, depending on options, a \$40,000 to \$60,000 machine. That's as much as you would spend on a good-size agricultural tractor. While farm tractors are getting to be like automobiles with their on-board computers and diagnostics, turf equipment is getting the same way."

For example, he notes, Toro, in many of its units, has an on-board computer that records the last 300 functions. "So if the mower breaks down and they fix it and in another couple of weeks it breaks down again, the mechanic can plug in a little handheld diagnostic computer that records or tells him what's been serviced on the tractor, providing him with some indication of the cause of the recurring problem."

All the Right Equipment

VanDeValk says SUNY Cobleskill's turf and grounds-care equipment technology program will emphasize hands-on experience. Turf equipment dealers such as S.V. Moffett, a

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Rochester, NY, based company with a branch in Cohoes, NY; John Deere Company, Raleigh, NC, branch; and Briggs & Stratton Company, Milwaukee, WI, have either donated or loaned equipment to the college for the program. Included are gang mowers, commercial walk-behind mowers, front-mount mowers, residential lawn tractors, compact utility tractors, utility vehicles, skid-steers, string-trimmers, blowers, turf sprayers, overseeders, topdressers and aerators.

So, students will be exposed to a wide variety of machinery manufactured by such firms as Ryan, Cushman, Ransomes, Jacobsen, John Deere and Toro, VanDeValk says.

"The students will learn how to troubleshoot equipment problems, how to calibrate sprayers, do reel sharpening, and how to establish a preventative maintenance program," he says.

The college recently offered a week-long golf course mechanics school for 30 members of the Golf Course Mechanics Association from golf courses throughout New England. The school covered a wide variety of topics — from diesel engines to carburetion, electrical and hydraulic systems troubleshooting, reel grinding,



SUNY Cobleskill student Jason Burroughs grinds a bedknife from a reel unit on a Neary grinder. Photo courtesy: Larry Abrams.

and irrigation equipment maintenance.

Lucas, who attended the school, says the school was "better than I had expected. The instructors were top notch; they're true professionals in the business of teaching."

He adds, "The way the technology in our industry has changed in the last few years has compounded our need to update our knowledge of the equipment. The sophistication of that equipment has grown to a point where we need the education in order to maintain it properly."

Says Lucas, "It's a great advantage for us to have a place like Cobleskill Col-

lege that's so well stocked in their equipment. It's overwhelming what they [the equipment engineering department] have available, as well as the information and the technology. It's all there, and it's impressive."

Ensuring that up-to-date equipment is available for the turf and grounds equipment technology program is a major goal of the college's agricultural engineering faculty.

"Our facilities here are a major factor in what we can offer students who enroll in the program, especially the level of testing we can do with the latest diagnostic equipment," says VanDeValk. "We're better equipped than most equipment dealerships are in terms of the number of tools we have for student use and the number of pieces of diagnostic equipment, anything from hydraulic testers to battery-load testers to fluke meters, air tools, pneumatic tools and reel grinding equipment."

Those who would like further information about SUNY Cobleskill's associate degree in turf and grounds-care equipment technology should contact Professor Lawrence VanDeValk, Agricultural Engineering Department, SUNY Cobleskill, NY 12043. □

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