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NAHETS combines in-the-field training with classroom instruction. Students must pass a proctored exam.

It's hard to look at large-scale construction equipment without thinking, "Wow, I'd like to try that out." Those who actually do get the chance to operate heavy equipment quickly realize the responsibility and skill needed to navigate machines that are very big, very powerful and very expensive.

The key to operating heavy equipment is proper training. This goes for those working in landscape construction looking to take things up a notch by getting behind the wheel of bigger machinery, and it applies to landscape construction companies considering the purchase or rental of bigger equipment in hopes of getting bigger jobs, or getting jobs done quicker.

One avenue to get that training is through the National Association of Heavy Equipment Training Schools (NAHETS), which is made up of five schools around the country. At these schools, students can learn how to operate equipment ranging from massive cranes to simple skid steers, not to mention dozers, dump trucks, wheel loaders, scrapers, forklifts and more. The schools attract those new to the industry looking for training that will help them get their foot in the door, as well as experienced equipment operators.

Chris Cannon, national training director with NAHETS (www.nahets.com), has some good news for those in the landscape business who have experience (and, hopefully, some training) in the use of equipment such as tractors, mini excavators and skid steers, and who are looking to get into bigger equipment. "One of the ironic things moving from smaller to larger equipment is that smaller equipment is actually harder to operate," he explains. "It reacts more quickly. If you hit a 2-inch rock with a small bulldozer, for example, you can always feel it, and it can throw you out of kilter a little bit when you're doing grading. On a larger machine, you'd never even notice it."

Smaller construction equipment also generally moves hydraulic fluid throughout the system more quickly than larger equipment. "The result is smaller equipment tends to be more jerky in terms of maneuvering," says Cannon. "The bigger machines, with bigger pumps and bigger hydraulic capacities, take longer to make the same movements because there's so much fluid that needs to be pumped." The result is slower, but smoother, movements.

"Most of the students that come to our schools have their eyes wide open when they see the big equipment. They say, 'Now that's what I want to operate,'" says Cannon. "The heavy equipment is fun to operate, but smaller equipment does offer advantages in terms of speed and reaction time, and once you know how to operate smaller equipment, the bigger machines are almost easier."

For that reason, much of the training at the NAHETS schools tends to be done on midsize equipment—units that provide an operating feel that blends small and large machines—giving students a taste of both worlds.

Cannon cautions that training is critical to operate heavy equipment the right way. The NAHETS approach uses four levels of training. Level 1 uses equipment such as backhoes, skid steers, small dump trucks, tractors with ganon boxes and a loader. Level 2 introduces scrapers, bulldozers, telehandlers and compactors. Level 3 gives students a taste of motor graders and excavators. Level 4 is devoted entirely to crane operation, for students interested in that niche. "Crane operation tends to be its own career in and of itself," says Cannon.

Beginning right with Level 1, students get training not only in operation of equipment, but also in basic landscape construction methods and strategies. "We work from real blueprints; it's a basic blueprint, but it has all the elements on it," explains Cannon. "We make

sure the students can understand it, and then survey it first, grade it out, check the grade, and then actually build the project, so the students walk out with a full range of skills."

Classes generally last around three weeks. "That's not a long amount of time, but we have a real system for training in place," Cannon says. "We work by skill, rather than by time, so as each student progresses, we'll check them off and move them on to the next step. A lot depends on the aptitude of each individual, but we can advance them pretty far just in Level 1."

A program called Yellow Metal Boot Camp takes students in small steps, making sure they can handle basic things before taking them into more advanced operations, says Cannon. "For example, when we work on digging a trench with a backhoe, we start by having them float the teeth of the bucket above the ground, essentially digging the trench in the air. This teaches them how to do a coordinated motion very smoothly. It's a lot more difficult to dig in the air, because the ground gives you something to press against."

Instruction at the NAHETS schools takes the form of classroom and on-site training. Students must pass a proctored test and demonstrate practical skills out in the field. "We don't pass everyone, we're not a diploma mill," says Cannon. "The students who do well I think amaze themselves. They begin thinking, 'How can I do this,' but they surprise themselves. On the first day they get on a backhoe they're very jerky, but they build their skills step by step. By the last day, they're able to set an egg on a cone using the tooth of the backhoe!"

NAHETS schools can certify students according to NCCER (National Conference of Construction Education and Research) standards. The national group (www.nccer.org) is



Part of the instruction focuses on operating equipment smoothly and efficiently. "We work on the ability to be very precise," says Chris Cannon. "If you're digging a footing as opposed to a basic trench, your tolerances are a lot closer, and you have to be able to dig those back walls."



Classes conducted through the National Association of Heavy Equipment Training Schools (NAHETS) provides students a chance to learn first-hand on a variety of heavy equipment.

affiliated with the University of Florida and has a mission to "build a safe, productive and sustainable workforce of craft professionals."

"We're finding that a lot of towns and municipalities are now requiring certification in order to operate equipment," says Cannon. "I really think in the future that everyone will have to be certified, just because of the liability involved. With everything that goes on at a construction site, it's sort of amazing how many people are operating equipment, and the situations they get themselves in, without certification. Speaking from personal experience, as a foreman, I'm amazed sometimes when we get foremen at the school at their lack of knowledge about basic things."

Similarly, those who have experience operating equipment sometimes turn out to be the most challenging students. "When guys come in with some experience, we often have to break a lot of bad habits. They're usually faster than the other students, but we have to slow them down and get them to rethink everything. The guys who come in fresh are a lot safer, I know that," says Cannon.

Safety is an important part of the training at all levels of instruction, and it begins before the equipment is ever turned on. "It's first and foremost," says Cannon. "We build safety around everything we do." For starters, students are given instruction in how to inspect the machine, looking for cracks or other problems, before firing it up. "We serve as lifeguards as well as teachers," he says of the instructors at the schools. "For example, we're always reminding students about the need to have three points of contact when climbing up into equipment. Statistically, we've found that's the most dangerous thing, in terms of frequency of injury, just getting in and out of the equipment."

Once behind the controls, students must learn to adapt to the sheer size of heavy equipment. "One of the most important things you have to have when you operate heavy equipment is the ability to judge distance. You really have to have an eye for it, because when you're working with such large equipment, you're working with large ranges and tail swings and weight capacities. So, you have to pay a lot more attention."

Students also learn the skills needed to operate the machines effectively and efficiently. "We work on the ability to be very precise," says Cannon. "If you're digging a footing as opposed to a basic trench, your tolerances are a lot closer and you have to be able to dig those back walls, and you need to be able to do it from wherever the machine is without having to get in and maneuver it all around."

NAHETS schools use a variety of different equipment lines, says Cannon. "We own some equipment, but lease most of it. We have Caterpillar, Hitachi, Case, and we recently signed a deal with Volvo to develop a training series for Volvo for their backhoes. We find that once a student learns how to operate a particular piece of equipment, they can transfer that skill to other lines. The only real difference is the configuration of the controls themselves; the way the equipment digs or operates remains mostly the same."

NAHETS also has a contract with Trimble, teaching students how to operate the company's high-tech equipment in advanced grading and survey work. "That's really for grade setters and grade checkers, as well as site supervisors. We can certify people on the Trimble equipment and give those interested in that type of career a little more advanced instruction," says Cannon. "Things are going in that

high-tech direction, but we do still teach students the basic methods of grading so they can use a hand level or laser out in the field."

Students even learn how to perform routine maintenance and fluid level checks on the equipment, as well as safe trailering practices. There are also more obstacles and considerations that go into trailering heavy equipment than smaller construction equipment, says Cannon, and this is another area covered in the NAHETS curriculum. "You have to know a lot more about load capacities," he says.

On the final day of training, students take part in a "graduation rodeo" and get a chance to show off what they've learned for parents, spouses and other invited guests. Finally, NAHETS offers students job placement assistance, if needed, but with comprehensive training under their belts, students already have a leg up on the competition when it comes to operating heavy equipment.

Patrick White is a freelance writer and editor who is always on the lookout for interesting and unusual stories. He can be reached at pwhitevt@aol.com.

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St. Johnsbury, VT 05819
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