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Simulators Help Haulers Keep on Trucking

By Brad Foss/AP Business Writer

Dennis Colwell stared hard at the side-view mirror and gripped the steering wheel before attempting to maneuver around a pickup parked between his 18-wheeler and the loading dock.

"If I make it, it's going to be paper thin," Colwell said to his instructor, Jay Gamble. But the implicit request for guidance was denied: "If I wasn't here," Gamble reminded Colwell, "what would you do?" Colwell took a deep breath, put the truck into gear and inched forward.

In many ways, this scenario could be found at truck driving schools across the country. But Colwell's experience at Schneider National's training program was very different from the industry norm in one key respect. He wasn't driving, or even sitting in, a real truck.

Instead, he was in a classroom, buckled into the seat of what looked and sounded very much like a high quality video game but was actually a state-of-the-art training simulator.

The virtual parking lot Colwell navigated was created with animation software, though the experience was quite realistic. Three wide-screen monitors gave a 180-degree field of vision, and images appeared in reverse through the side-view mirrors. The simulator was equipped with a steering wheel and clutch that put up life-like resistance, an electronic dashboard that tracked the truck's vital statistics and a horn, which Colwell honked before backing up.

Those who have never driven a big rig — this reporter included — would need at least a few hours of instruction on double-clutching and shifting before they could drive a simulated truck without having it stall out.

Top-notch simulators have been used by the military, commercial airlines and public safety agencies for years, but Schneider, based in Green Bay, Wis., is one of only a small handful of U.S. trucking companies making big bets on the technology.

"It's the beginning of a trend," said Sean Kilcarr, senior editor of Fleet Owner Magazine, a Stamford, Conn.-based trade publication.

There are a variety of benefits to simulation, trucking executives said, from lowering the cost of training new drivers to improving their skills. And with the industry's employee turnover notoriously high, trucking companies are hopeful simulators can help quickly boost the confidence of young drivers and thereby reduce the percentage of those who quit because of the stress that comes from long stretches behind the wheel.

Still, until recently, these advantages were outweighed by the cost of simulators themselves, which could run as high as $1 million per unit. While much less expensive simulation systems were available as far back as a decade ago, these single-monitor consoles were mainly used for teaching basic shifting techniques, not how to drive on mountain roads or prevent skidding off an icy road.

Now, MPRI, a subsidiary of L-3 Communications, is selling simulators that can do all of that and more for about $90,000, one-fifth of the price five years ago. MPRI also sells fancier full-motion units for about $350,000, and a version with fewer bells and whistles for $60,000.

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Schneider trucking instructor Jay Gamble, right, works with a student Dennis Colwell at the controls of the two computerized truck simulator at Schneider's Carlisle, Pa training center. The simulator is equipped with steering wheel and clutch that put up life-like resistance, on electronic dashboard that tracked the truck's vital statistics and a horn which Colwell honked before backing up.

Schneider executives said the lower price and improved quality of the newest simulators were major factors behind the company's decision in October to purchase 50 units from MPRI for its training centers in Pennsylvania, Wisconsin, Indiana, Arkansas, Ohio and California.

Simulation now accounts for about one-third of the time every new Schneider recruit spends behind the wheel during a two-week training program, and the machines will also be used in refresher courses for veteran drivers.

So far, Schneider executives said they like what they see in terms of reduced training costs, fewer accidents and higher employee retention.

"It's the way of the future," said Don Osterberg, Schneider's vice president of safety.

Swift Transportation, a Phoenix-based trucking company, purchased about 20 simulators from MPRI in 2005, and J.B. Hunt Transport is testing MPRI's equipment.

Werner Enterprises Inc., an Omaha, Neb.-based trucking company, bought a simulator from Lockheed Martin Corp. about five years ago for $750,000 and still gets plenty of use out of it, John Steele, the company's chief financial officer said. Steele said Werner might buy more simulators as the cost comes down (although not from Lockheed Martin, which no longer caters to commercial truckers).

Still, it could be a while before the technology is widespread in the industry.

"For smaller trucking companies, the cost is still a big deal," said Jim Naatz, MPRI's vice president of sales.

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Schneider National trucking student Stephen Brambach at the controls of the computerized truck simulator had a "collision" during his session.

Some private and community college-based trucking schools have used very basic simulators for years, and while the range of skills that can be taught on them is limited, they are still effective, owners of such equipment said.

"It takes the white knuckles off the steering wheel," said Harry Kowalchyk, president of the National Tractor Trailer School in Liverpool, N.Y., which purchased half a dozen simulators in 2000 for $60,000 from I-Sim Corp., the company that would later become MPRI. (I-Sim was bought by General Electric, then sold it to L-3.) The simulators are used primarily to teach shifting.

By comparison, Schneider's simulators also provide a safe environment in which to practice driving in hazardous road conditions. And because scenarios from a parking lot or mountain road can be instantly replayed, it is easy for students to concentrate on their weaknesses, instructors said.

All simulators are useful in teaching students how to shift gears in a way that maximizes fuel efficiency, and the benefits are magnified because these skills can be learned without burning any diesel. Also, simulators limit wear and tear on a company's fleet.

Since Schneider began incorporating simulators into the training at its headquarters in Green Bay in March, the company said the number of new drivers who have accidents during their first 90 days on the job has fallen by 25 percent. And, perhaps not coincidentally, there has been an equivalent decline in the number of people dropping out of the training program or quitting their jobs within the first 90 days.

"That's a huge savings," said Kilcarr of Fleet Owner Magazine. Kilcarr estimated trucking companies spend between $5,000 and $8,000 to recruit and hire each new driver.

Up until the moment Colwell had to squeeze his rig past a blue pickup truck, he moved around the simulated parking lot with ease. But he found himself in a tight spot and, rather than back up to give himself more wiggle room, he went for it.

In an instant, there was the sound of a crash and the word "COLLISION" flashed in red across his windshield.

If Colwell and Gamble were practicing this scenario in an actual parking lot with an actual truck, Gamble would have intervened long before Colwell got close enough to hit another vehicle — which is why simulation is so important, Gamble said.

"It's a good experience for them to see how far they can push the envelope," he said.