

Practice makes perfect

Simlog introduces first Personal Simulators for haul trucks

Would you hand the keys of a million-dollar vehicle to a novice driver? How about letting them drive a haul truck with a payload of 100 to 240 tons? In learning to operate heavy-duty mining equipment, the trial-and-error approach can be costly and dangerous.

As mining equipment becomes increasingly expensive, complex and difficult to operate, proper training becomes vital to optimal productivity. Meanwhile, teaching the operation of heavy equipment can be hazardous to both equipment and trainees, especially in the initial stages. Simulation training, while available, has traditionally been prohibitively expensive.

To mitigate the expense and risk involved in haul truck operator training, Simlog Inc., in collaboration with leading OEMs and training professionals, has developed the world's first PC-based haul truck simulators for the mining industry. Simlog's software puts students at the controls of a virtual haul truck at work with simulated loading equipment, enabling new operators to acquire mission-critical skills.

"Complex, hardware-based simulators have been around for quite some time," said Simlog's Mike Keffer. "However, they require a high commitment in terms of initial cost and ongoing support. Our goal was to create an affordable, completely portable, PC-based system that provides comprehensive core skills training."

Keffer explained that Simlog's haul truck simulators can help:

- make real seat time safer;
- minimize equipment breakage due to operator inexperience;
- promote best driving practices to reduce tire wear; and
- reduce the number of hours that equipment is removed from production to allow for training.

The instructional design segments the operator's work into a series of six progressively difficult simulation modules, beginning with basic Controls Familiarization and



A cabin view offered by Simlog's haul truck simulation software.

terminating with the Complete Haul Cycle, which combines loading, driving and dumping.

For each module, key performance indicators measure the speed and care with which the simulated task is performed.

Productivity measures include:

- execution time;
- maximum driving speed; and
- positioning time for loading and for dumping.

Quality measures include:

- positioning accuracy for loading and for dumping,
- peak brake temperature, and
- the accuracy of gear changing, hoist control, etc.

Designed for beginners, the simulation training can also help refresh veteran operators or be deployed as a screening tool to gauge aptitude for operating the equipment. The software runs on most computers and can be displayed on a big screen, a video projection screen or even a laptop computer. The USB-connectible operator interface can comprise either low-cost, off-the-shelf PC input devices or specialized OEM controls, including elements from real haul trucks.

An unlimited use commercial software licence is available for a one-time fee of approximately US\$6,000 to US\$10,000 per PC. The cost of the controls depends on the type chosen. Keffer said that when you consider the cost of training on a real haul truck — including accidents due to inexperience and training safety issues — the system can quickly pay for itself. "The cost of replacing one blown-out tire, which on one of these trucks can be in excess of \$60,000, can pay for a basic system four times over," said Keffer.

When trainees eventually graduate to actual trucks, advanced training costs can be greatly reduced because they already have sound basic operation skills. With tremendous pressure to reduce haulage costs, the benefits of Simlog's Personal Simulators can prove to be very real. ■



The use of off-the-shelf PC controls enhances the portability and affordability of Simlog's haul truck simulators.