



A Cat® autonomous truck stages for loading as a shovel completes loading another 793F CMD. Photo courtesy of Finning Canada.

Finning Canada testing autonomous hauling

by Kathrine Moore

Finning Canada, a division of Finning International Inc., the world's largest Caterpillar, Inc. [CAT NYSE] equipment dealer, is headquartered in Edmonton, Alberta. Their bright yellow Cat equipment is a familiar sight on worksites in most industries the world over.

In recent years, the technology around vehicles, whether cars, trucks or industrial equipment, is advancing by leaps and bounds. Huge advances in battery technology are making possible the electrification of vehicles of all kinds. Autonomy, a parallel game-changing technology, is advancing just as quickly. Autonomous buses, rapid transit and taxis are begin-

ning to be accepted as inevitable. Industry, however, has been at the forefront of autonomous vehicle development for some time.

Caterpillar has multiple fleets of autonomous 793F CMD (Command) trucks, running in iron ore mines in the Pilbara region of Western Australia with great success. Their flagship autonomous fleet at Fortescue Metals Group in Pilbara has moved millions of tons of ore without a single lost-time injury since implementation five years ago. The company has also seen a 30 percent increase in productivity.

According to Brent Davis, VP mining solutions with Finning, "Cat Command for

Hauling takes advantage of sophisticated technologies. It enables the operation of mining trucks, interaction with other equipment, and integration with the customers' mining processes and systems. All of this allows busy mine sites to work safely and productively, without the need for an operator in the cab."

Finning Canada told *Resource World* they have entered into a joint agreement with Caterpillar and a company working in the Fort McMurray area of Alberta. Together, they'll test the use of autonomous haul trucks at the company's oil sands operation. Finning will provide expertise and support services during the

trial. “The purpose of the tests is to validate the Cat Command for Hauling solution for Canadian oil sands applications. We need to take into account the unique operational practices, ground conditions and other climactic factors when applying this technology in Canada,” says Davis. “Caterpillar has already completed extensive cold-weather testing and there appears to be no impacts to the system’s reliability. We are confident this application of innovation and technology will enhance the safety and productivity of the company’s operations.”

Autonomous trucks can safely interact with manned-vehicles while maintaining optimal operating speeds. “As an emerging technology solution, autonomy can help reduce the impact of some challenges facing mining companies in the industry today, especially with respect to safety and operating efficiencies,” says Davis. “Enhanced safety is the largest benefit associated with the technology. The increased accuracy of an autonomous vehicle reduces access to hazardous areas and increases positional awareness and predictable operation.”

Davis states autonomous technology is a key element enabling the growth of the mining sector business and adds, “We are focused on using our technology expertise and working closely with customers to gain a better understanding of their operations to ensure the autonomous haulage solution is aligned with their requirements”.

Cat Command for Hauling is a fully-integrated suite of technologies, positioning systems and wireless communication that expands to all areas of the autonomous operating zone and part of the Cat MineStar™ System: Fleet, Terrain, Detect and Health.

Fleet is an integrated mine-monitoring system and management system that improves productivity at mining operations.

Terrain is the high-precision guidance system used on manned-loaded tools and dozers. Terrain systems communicate with autonomous trucks to provide information on queuing and spotting.

Detect provides awareness and visibility to the environment around manned or autonomous equipment, providing information about location and proximity to other equipment and mine-site assets.

Health records and transfers critical machine information to the office, driving proactive maintenance practices for both manned and autonomous trucks.

Cat Command for Hauling is currently available on the 793F and 797F. Development work is underway for other models and Caterpillar is also expanding the application to other manufacturers, including the Komatsu 930E.

“By partnering with Finning, companies can capitalize on our technology solutions. They can also use our machine and product support experience to get a customized system that meets their autonomous production requirements and operational needs,” says Davis. ■