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Filling the tank – precisely and safely



TransRail Innovation Inc's digital radar level measurement technology allows rail terminals to improve efficiency and enhance worker safety

Rail transloading terminals are faced with many challenges. Of course, safety is paramount, but terminals also need to optimise operational efficiency.

Accurately measuring commodity volume and residual product (heel) while maintaining a closed tank filling process, as mandated by corporate health and safety policies, is difficult. To maintain safety compliance, many terminals only accept rail tank cars that have an installed mechanical gauge. However, this subsequently requires a time-consuming, multiple step, check loading process.

And, the potential risk of gauge measurement inaccuracy is dependent on its proper calibration and intermittent reliability.

Rail cars without a mechanical gauge are significantly underfilled to avoid overfilling, and this reduces throughput and terminal efficiency.

Hence, there is a need for precise level measurement that enables the terminal to maximise tank car loading, while also preventing the risk of overfill which poses a safety hazard.

ALTEX ENERGY

Altex Energy Ltd operates four manifest and unit train terminals in Western Canada. A rapidly growing private corporation, Altex operates a special 'crude by rail' service model. Under this,

crude oil shippers deal with Altex the same way they traditionally would with a pipeline.

Shippers typically pay a pipeline toll to transport their crude from the 'pipe head' terminal to a destination terminal. Rail shippers do exactly the same with Altex. Additionally, the company manages more of the elements of transporting crude to market, with less risk and cost.

To keep this business model sustainable Altex is continuously searching for solutions to advance terminal loading safety and operational efficiency, and, in particular, to prevent non-accidental releases (NARs) of hazardous commodities.

Calgary-headquartered TransRail Innovation Inc (TRIG) designs and produces advanced radar sensor and communications platform solutions for rail terminal operations and rail shippers.

Recently, Altex successfully tested and installed TRIG's TLoad radar sensor technology, integrated with existing Altex processes, on the company's Lashburn unit train facility loading racks. The results showed significant improvements.

"TRIG's TLoad solution is a reliable and adjustable liquid level shutdown that enables us to load tank cars to their maximum capacity every time," says Pedro

Nunez, manager of operational projects at Altex. "This means we consistently load up more volume in the same tank car on a loading station equipped with the TLoad when compared to a loading station using older, less reliable technology."

TRIG's level measurement solution is used by terminal operators to prevent spills and overweight tank cars by providing operators with automatic, real-time and continuous level measurement without having to open a tank car and measure its volume with a manual dip stick.

With this technology, along with TRIG's communications platform, operators have access to gross tank car volume, as well as the volume of residual

We consistently load more volume with the TLoad when compared to a loading station using older, less reliable technology

▶ product (heel) that may have been in the tank car before loading.

TRIG's TLoad technology gives companies like Altex the confidence that they will not overfill rail cars due to the ability to fully automate the shutdown, eliminate manual processes and human intervention. "Due to this technology," says Richard Morgan, vice president operations and engineering, "we have been able to significantly reduce and eventually eliminate operator exposure to vapours from potentially hazardous commodities".

As a result, Altex is moving forward to fully equip all rail tank car loading stations at the Lashburn terminal with TRIG's TLoad Solution.

For TRIG, working with Altex Energy has become a valuable proving ground for its technology. "Altex is recognised as a leader in the rail industry with the use of its digital iGO rail terminal technology," says TRIG CEO, Rob Tasker. "We are really pleased to be working with them. We have been able to demonstrate that TRIG's solutions improve terminal efficiency and enhance worker safety by automating tedious, manual and potentially hazardous processes."

SIMBA

Another TRIG partner is Simba Transload Ltd, a transload terminal operator also based in the Canadian province of Alberta.

Simba CEO Marvin Trimble sees a particular benefit of TRIG's solution in closed loop loading. "Closed loop loading is the standard for maximising worker safety and minimising environmental impacts," says Trimble. "However, many solutions and processes are not able to achieve this as measurement of volume in a tank car during loading and unloading poses several challenges around corporate policies, operator processes, and available measurement technology."

Trimble continues: "Operator processes and uncertainty in manual volume measurement further increase safety margins and so reduce operational efficiency. However, TRIG has engineered unique level measurement solutions that enable terminal operators to maintain closed loop loading and increase efficiencies through an automated process."

"By using advanced algorithms with our sensors, we can calculate the offset of the radar sensor above the strapping table," explains TRIG's Robert Tasker. "This translates into a volume measurement that includes residual product (heel) and relieves the operators from performing any manual volume measurements."

"Operational efficiency is increased by allowing operators to focus on other tasks and reducing the total measurement

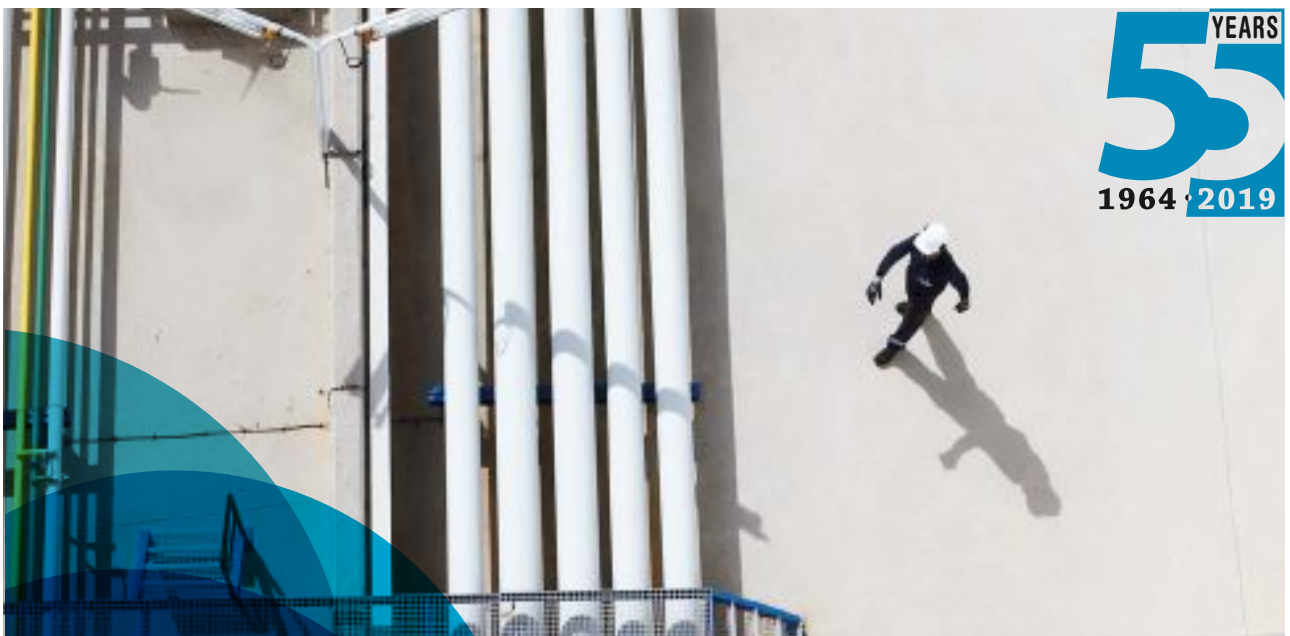
By using advanced algorithms with its sensors, the TRIG system can calculate the offset of the radar sensor above the strapping table



uncertainty so more volume can be loaded into the tank car. Lastly, by maintaining a closed loop loading system, the TRIG solution helps to prevent and identify NARs."

By using TRIG's solution client terminals have reached something of a Holy Grail; being able to optimise operational efficiency and maximise throughput, all while enhancing the health and safety of personnel.

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