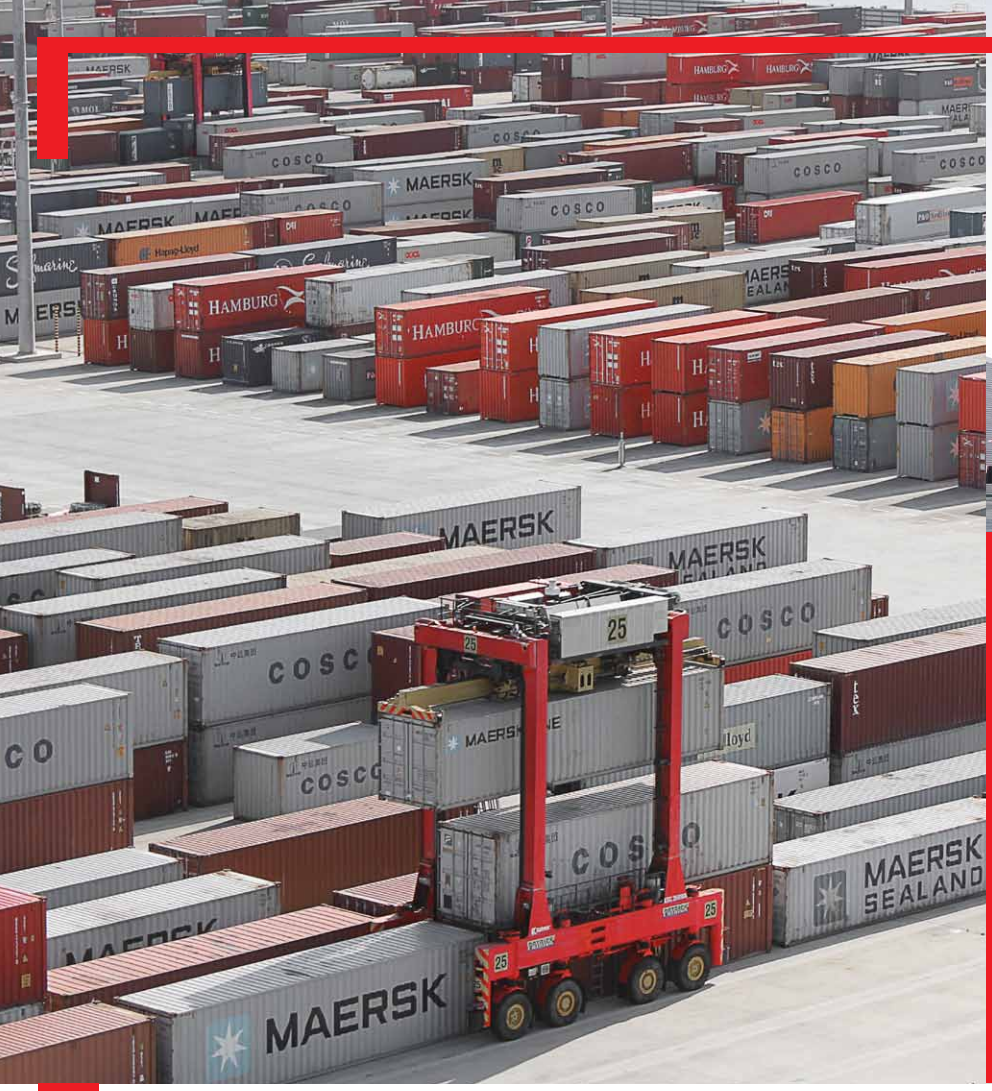

"We went 12 months without a single lost time injury among our 160 employees."

MATT HOLLAMBY,
BRISBANE MANAGER,
TERMINALS DIVISION, PATRICK

The ease of automation

Automation is a key competitive advantage for Patrick's container terminal at the Port of Brisbane, Australia.

Terminal

Patrick is Australia's largest national operator of shipping container terminals and the only Australian-owned stevedore. It moves more than half of the country's containerised freight through four major centres with long term concessions for the operation of terminals in Brisbane, Sydney, Melbourne and Fremantle.

The company, which is owned by Asciano – Australia's largest national rail freight and cargo port operator – has invested more than A$300m in its terminal at the Port of Brisbane (which has a quay line of 900 metres) since 2005.

Challenge

Patrick's journey to automation began in the mid-1990s, when the management team faced the challenge of improving the safety and efficiency of the operation while at the same time containing rising costs. Patrick saw automation as an opportunity to streamline operations and introduce process-line concepts into terminal stevedoring.

An added push was the emergence of a third stevedore to challenge the effective duopoly of Patrick and DP World at the Port of Brisbane. The focus of the operation was to improve stevedoring in anticipation of increased competition and tougher operating conditions.

Solution

Patrick decided to automate an existing Kalmar straddle carrier, which made possible a phased transition from manual to automated processes.

The automation technology used in Kalmar AutoStrads was developed in close cooperation between Kalmar and Asciano.

Patrick's Brisbane terminal now operates 27 Kalmar AutoStrads and plans to implement 44 AutoStrads and real time control systems automation at the company's Port Botany redevelopment project in Sydney by early 2015.

KALMAR

Technology

The fully automated container handling system was the first of its kind to be built for unmanned operations.

The unmanned Kalmar AutoStrads™ can operate 24/7 in almost any weather conditions, ensuring smooth flow of cargo and significant cost savings. The transition to automation can be done quickly and at low cost.

Kalmar AutoStrads use a millimetre wave radar system rather than GPS, which makes them self-contained and autonomous in terms of navigational integrity and accurate to within 2cm. They move freely on a virtual computer-generated grid of weigh points, which can be applied to most existing terminal facilities without the disruption of digging up pavements.

Added value

Unmanned operation cuts labour costs in the terminal. Machine hours are minimised by employing automatic shutdown, which reduces idle time costs to zero. Additionally, as automated operation doesn't require night time lighting, energy savings in a 40-hectare terminal can add up to some A$100,00 per annum.

Straddle carriers offer real flexibility as they can move cargo both vertically and horizontally and stack containers in stacking areas or load them on or off road vehicles. This versatility means they can work to a much higher degree of independence than other machines in the terminal, which brings savings in time and cost.

Straddle carriers spread the wear on the container and equipment pavement throughout the terminal, which lengthens the depreciation period. An increase in pavement life of 50–100 percent means a significant decrease in depreciation costs. Tyre consumption is also reduced thanks to sophisticated routing of the machines.

Results

Fully automated straddle carriers can operate all day, every day and cut labor costs significantly. Patrick's work force has decreased drastically, as today a crane gang of only four people is needed to operate a ship-to-shore crane and the yard and stacking area.

Eliminating human error is one of the main benefits of an automated system. The result is a marked improvement in workplace safety. Patrick's AutoStrad terminal has become one of the safest in the world since the introduction of the Kalmar AutoStrad system.

Contact

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Kalmar is the industry forerunner in terminal automation and in energy efficient container handling, with one in four container movements around the globe being handled by a Kalmar solution. Kalmar is part of Cargotec.

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