LYTTELTON PORT COMPANY (LPC), CHRISTCHURCH, NEW ZEALAND

eliminated the need for working at height and exposure to person vs plant risk through the use of high-resolution camera drone inspections

the challenge

Across our Inland Ports and Empty Container Depots we have a range of work that is required to be performed at height. This includes Container Roof Inspections as part of the inbound Container Survey process, Container Stack Inspections post High Wind Events and Structural Roof Inspections as part of Building Compliance. This requires staff to access work at height via an Elevated Work Platform (EWP) which requires a range of manual handling controls, as well as adding significant time to various processes. LPC handles approximately 500,000teu per year and Container Survey staff are required to ascend and descend an EWP each time an Empty Container is received into the Yard so that the Roof could be checked for any damage.

Container Stacks are also checked for stack integrity post a High Wind event (>32knots). This requires staff travelling into the Yard to check for any stack collapses or dislodged containers so that operations can safely resume. If stacks are found to be damaged or dislodged then the Supervisor conveys this information to Container Handler Drivers advising that Stack that need to be rectified. This adds significant time and effort and presents a safety risk to personnel on the ground should another Wind Gust dislodge a container.

Structural/Building Roof Inspections also require staff to work at height via an EWP or Ladder, erect scaffolding/edge protection in certain situations.

Ideally, any at height work is eliminated rather than managed with controls, however this isn't always practical.

the innovation

Quite simply, we have introduced the use of drones fitted with advanced, high-resolution camera technology to carry out a wide range of visual inspection tasks. By completing these inspections remotely, our operational personnel remain safely on the ground and completely removed from the operational area. This approach eliminates the need for working at height and exposure to person vs plant risk.

The drone's powerful zoom capability and manoeuvrability allows surveyors to clearly identify potential damage to containers and quickly assess the scale of repairs required to maintain IICL compliance. Images can also be shared directly with clients, providing clear visibility of container roof areas that may need maintenance or repair.

Furthermore, drones enable safe inspection of 7high container stacks post high wind events - areas that cannot be viewed by the human eye without significant safety risks or high resolution CCTV spanning large areas.

By removing people from hazardous environments, the use of drone technology has delivered major safety improvements, while also supporting greater operational efficiency.

how it was implemented

We are unaware of any other Empty Container Depot / Port Operators across New Zealand utilising drone technology for this purpose so the introduction into our operations was carefully planned with safety as the top priority. Our Site Operations Supervisor led the initiative, engaging directly with the operations team to assess a wide range of factors critical to both safe use and long-term success. These discussions covered training requirements, system testing, battery performance, equipment suitability, durability under operational conditions, and how the technology would enhance engagement with our customers.

Before the drone was deployed, our surveyors undertook comprehensive training to ensure safe and competent operation. All necessary approvals were obtained from the Civil Aviation Authority (CAA), reinforcing compliance with aviation regulations and safe airspace management. In parallel, a detailed Safe Work Method Statement (SWMS) and Risk Assessment were developed, ensuring that potential hazards were identified, assessed, and controlled prior to implementation.

what was the result

The results speak for themselves: the team has fully embraced this innovation, recognising not only the operational efficiencies it delivers but, more importantly, the way it significantly

reduces personal exposure to risk. By removing the need for staff to physically climb onto container roofs, we have eliminated a critical risk and created a safer working environment.

LPC GM Inland Ports Sean Bradley (left) presenting MidlandPort Site Supervisor Dan Johnson (centre) with an "LPC Safe Mate" Award for his Drone initiative, alongside MidlandPort Site Manager Rob Pape

The efficiency improvements are equally compelling. Previously, surveying a single container roof (including setup time) could take up to 5 minutes. With the new technology, the team can now complete inspections of 5 - 10 container roofs within that same timeframe - representing a tenfold increase in productivity without compromising accuracy or safety.

We are also exploring further applications. For example, inspecting site perimeter fencing - a task that traditionally requires up to 2 hours of manual effort - could now be completed in just 15 - 20 minutes, with improved coverage and consistency. This means faster compliance checks, less downtime, and more time available for critical operational tasks.

The introduction of this technology demonstrates our ongoing commitment to protecting our people, driving continuous safety improvements, and embedding smarter, more efficient ways of working across our operations.

conclusion

The introduction of drone technology has delivered a step-change in how we manage safety and efficiency on site. By eliminating the need for people to work at height, we have removed one of the most significant risks faced by our workforce, while simultaneously improving the speed, accuracy, and consistency of critical inspections. What once required time, manual handling of Working at Height equipment, and personal exposure to hazards can now be achieved in minutes - safely, reliably, and without compromise.

This initiative reflects our commitment to a culture where safety comes first, innovation is embraced, and smarter solutions are applied to protect our people. The measurable improvements in both safety outcomes and operational efficiency show that this is not just a technological upgrade, but a genuine transformation in how we work.

Importantly, this success has not gone unnoticed. Other New Zealand operators have expressed strong interest in the initiative and are keen to visit our site to see the technology in action. This demonstrates the potential for the approach to deliver wider industry benefits by raising the standard of safe work practices across the sector.

Through this initiative, we have set a new benchmark in safety leadership, demonstrating that eliminating risk at its source is the most effective approach. Importantly, meaningful improvements in safety need not be complex or costly. Our drone, purchased for approximately NZ$900, has delivered substantial enhancements in both safety and efficiency - outcomes we are proud to showcase through this Safety Award programme.

LINK: https://www.lpc.co.nz/

About TT Club

TT Club is the established market-leading independent provider of mutual insurance and related risk management services to the international transport and logistics industry. TT Club's primary objective is to help make the industry safer and more secure. Founded in 1968, the Club has more than 1100 Members, spanning container owners and operators, ports and terminals, and logistics companies, working across maritime, road, rail, and air. TT Club is renowned for its high-quality service, in-depth industry knowledge and enduring Member loyalty. It retains more than 93% of its Members with a third of its entire membership having chosen to insure with the Club for 20 years or more.

International Cargo Handling Coordination Association

Established in 1952, ICHCA International is an independent, not-for-profit organisation dedicated to improving the safety, productivity and efficiency of cargo handling and movement worldwide. ICHCA's privileged NGO status enables it to represent its members, and the cargo handling industry at large, in front of national and international agencies and regulatory bodies, while its Technical Panel provides best practice advice and develops publications on a wide range of practical cargo handling issues. Operating through a series of national and regional chapters, including ICHCA Australia, ICHCA Japan and Correspondence and Working Groups, ICHCA provides a focal point for informing, educating, lobbying and networking to improve knowledge and best practice across the cargo handling chain.

Disclaimer

ICHCA prepares its publications according to the information available at the time of publication. This document does not constitute professional advice, nor is it an exhaustive summary of the information available on the subject(s) to which it refers. Information contained in this document has been compiled with due attention to generally accepted good practice and, where appropriate, regulation. The aim is to share learning to prevent accidents and improve health and safety in cargo handling. References to external links, documents and web sites remain with the copyright owners. ICHCA International is not responsible for, and cannot guarantee the accuracy of, information on sites that it does not manage; nor should the inclusion of a hyperlink be taken to mean endorsement by ICHCA International of the site to which it points.

Responsibility for health and safety compliance remains with the duty holder. Publications should always be read in conjunction with the relevant national and international legislation and any applicable regulations, standards and codes of practice. It should not be considered as an all-inclusive manual or handbook on any specific aspect of the subject matter to which the publication refers. Every effort is made to ensure the accuracy of the information, but neither ICHCA, the author(s) nor any member of the ICHCA Technical Panel is responsible for any loss, damage, costs or expenses incurred (whether or not in negligence) arising from reliance on or interpretation of the publication. Comments set out in this publication are not necessarily the views of ICHCA or any member of the ICHCA Technical Panel.

The information above, is taken from the entry forms received for the TT Club Innovation in Safety Award and is presented with the entrant's consent. This includes images and graphics. All materials, content, links, copyright and claims relating to individual entries, products and services, belong to the respective entrants.

Further Advice and Information

ICHCA International also offers a technical advisory service, with input from ICHCA Technical Panel, to answer member regulatory and operational cargo handling queries. For more information contact secretariat@ichca.com or visit www.ichca.com