Brighter – safer – future

by Richard Steele, *CEO, ICHCA International*

Safety innovation is not confined to one aspect of the operation. It is continuously emerging across training, equipment design, digital systems, cargo integrity, and the critical interface between people and machinery. In *Safety refined many a way. Designing danger out of cargo handling – part one*, we explored how organisations are reshaping safety through behavioural insight, engineering controls, and better use of data. What becomes even clearer when looking across the full breadth of this year's TT Club Innovation in Safety Awards is just how widely that thinking is now being applied.

The diversity of this year's entries reflects an industry that is not only innovating but doing so in ways that are increasingly connected and practical. As we've seen in part one of how to design danger out of cargo handling, several entrants are rethinking how safety knowledge is built in the first place, not as a one-off exercise, but as something embedded in operational culture.

Safety is not just taught

CM Labs Simulations is pushing the boundaries of immersive training through high-fidelity simulation environments. These allow operators to experience complex cargo handling scenarios, crane operations, equipment failures, and environmental challenges in a setting where mistakes can be made safely and learned from. This is not theoretical training; it is experiential learning that builds instinct as well as knowledge.

At an organisational level, Dublin Port Company is demonstrating how to unite multiple independent terminals within their port through open dialogue, structured safety training, standardised rules, and joint problem-solving. This peer-led engagement has been seeded into everyday port operations, reinforcing expectations consistently across the workforce. Similarly, the ESLI School of Logistics and Global Supply Chain Classroom are tackling the issue earlier in the pipeline, ensuring that cyber-risk understanding is embedded into the education of future logistics professionals, rather than retrofitted once they enter the workforce.

G2 Ocean adds another dimension, focusing on how safety engagement can be sustained. Rather than relying on periodic interventions, their approach reinforces real-world applicable safety behaviours through continuous communication and operational integration, helping to prevent complacency and keep risk awareness alive in day-to-day activities.

Taken together with the initiatives highlighted in part one, these entries point to a more mature understanding of learning: safety is not just taught; it's experienced, reinforced, and lived.

Re-engineering the people-equipment interface

If there is one area where innovation is both critical and increasingly visible, it is at the interface between people and equipment. Terminal operators such as APM Terminals Callao are focusing on improving how people and machinery coexist in busy operational environments. Their approaches centre on reducing uncertainty – whether through clearer separation, better communication protocols, or operational redesign that limits unnecessary interaction between personnel and moving equipment.

Alongside this, Aqaba Container Terminal is addressing safety from a different but equally important angle: the standardisation of personal protective equipment. By implementing a single, globally aligned system, Aqaba is bringing greater consistency and clarity to front-line safety practices, an undertaking that is operationally complex but critical in reinforcing expectations and reducing variability across the workforce. At Long Beach Container Terminal, this thinking is visibly present in the integration of technology and operational design to create more predictable, controlled environments. The aim is not simply to react to risk, but to structure operations so that it is less likely to arise in the first place.

Equipment and cargo-focused innovations are also playing a critical role. Autolash is addressing one of the most physically hazardous aspects of container operations, lashing, by developing automated systems that reduce or remove the need for manual intervention in potentially dangerous zones. This represents a direct application of the 'designing out risk' principle explored in *Safety refined many a way*.

Similarly, Cordstrap is focusing on cargo securement, ensuring that loads remain stable throughout the transport chain and that securing is more ergonomic and has a lower physical impact on those doing the work day in and out. Failures in this area can have serious consequences, and improved securing systems reduce the likelihood of incidents during handling.

KALP brings an engineering solution to 'pinning' operations where the traditional approach is to have people manually handle twistlocks, while port authorities such as Shoreham Port and Warrenpoint Harbour demonstrate how local operational changes, often grounded in detailed knowledge of site-specific risks, can deliver meaningful safety improvements to port work.

What unites these efforts is a move towards predictability and control. By reducing ambiguity in how people and equipment interact, they curtail the opportunity for error.

Building a system, not just solutions

Beyond the interface itself, several TT Club Innovation in Safety Awards entrants are tackling the broader challenge of how cargo operations are structured. The Euroports Group, working with Notra, is

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exploring novel approaches to cargo handling to reduce manual intervention, altogether lowering the risk of cuts, eye injuries, and musculoskeletal injuries. Their work reflects a broader trend towards rethinking processes rather than simply refining them. Modalinta is similarly focused on improving the safety of access through an accommodation ladder design, which is simpler and safer to deploy.

Fire risk continues to be an area of focus, and Turtle Fire Systems is addressing this through specialised fire suppression technologies designed for the unique challenges of cargo environments. Their work complements the solutions highlighted in part one, reinforcing the growing emphasis on preventing and managing high-consequence incidents such as container fires. Also addressing the potential for fire, Lokistix provides bespoke modular cargo packaging designed to contain and control fires, as well as providing digital alert and documentation benefits.

Data-driven safety continues to evolve as well, with several entrants showing how insight can be translated into action. Frederik Elting's SeaTag Float design addresses a very specific but important issue: the tracking and recovery of containers lost at sea. By improving the visibility of lost cargo, it not only supports recovery efforts but also reduces navigational hazards and environmental risks.

Similarly, Rombit Europe is applying wearable and connected technologies to improve worker safety. By tracking personnel location and movement and integrating this with operational data, their systems create a more responsive safety environment, one that can adapt in real time to changing conditions.

These innovations build on the work of organisations highlighted in part one, reinforcing a key point: data is most valuable when it is actionable. The goal is not simply to collect information but to use it to shape safer behaviours and decisions. Also, the inclusion of individual innovators such as Edmund Greenwood is in itself significant by highlighting the fact that not all innovation comes from large organisations. Individual insight, often stemming from direct operational experience, can identify simple but highly effective solutions to persistent safety challenges.

What stands out across all these entries is not just their individual merit but how they contribute to a broader system of embedded safety. Training initiatives are becoming more realistic and continuous. Equipment design is reducing reliance on human intervention for safety. Digital tools are improving visibility and coordination. Operational processes are being rethought to eliminate unnecessary risks.

Crucially, these developments are not happening in isolation. They are increasingly interconnected. A safer system is one where training, technology, process, and culture reinforce each other. This is where the role of collaboration becomes particularly important. Many of these innovations, whether developed by ports, technology providers, training organisations or individuals, have the potential to be applied far beyond their original context.

From innovation to standard practice

Across both parts of this series, a consistent picture emerges. The industry is neither short of ideas not lacking in capability. What matters now is how these innovations are adopted and embedded. The challenge is to scale what works; to ensure that effective solutions move beyond individual organisations and become part of standard practice across the sector. At ICHCA, that remains a central focus: showcasing success, learning from what has gone wrong before, facilitating the exchange of ideas, and supporting the industry in turning innovation into expectation.

What is increasingly clear from this year's TT Club Innovation in Safety Awards is that an ever-safer, more resilient cargo handling system is not a distant ambition: it's already taking shape. That progress is down to the ingenuity, commitment, and leadership of people across the industry, including those recognised here.

Congratulations to all those who entered! Your work is not only raising standards today but shaping the tomorrow of the industry. And if these innovations are any indication, that future is not only brighter, but fundamentally safer. ■