



TT Club Loss Prevention

July 2026

Port authority bulletin

What's inside?

- Building resilience in ports
- Planning for onshore power supply
- Electric foiling pilot boats
- How to be 'climate ready'
- Limiting the risk from sinking ships
- Tropical wildlife risk management
- Renewable energy training hub

Contents

- [04](#) Building resilience in ports
- [06](#) Planning for onshore power supply
- [08](#) Electric pilot boats help ports to decarbonise
- [10](#) How to be 'climate ready'
- [12](#) Limiting the risk from sinking ships
- [15](#) Tropical wildlife risk management
- [16](#) Renewable energy training hub
- [18](#) PIA's Port Industry Fatigue Working Group's Award
- [19](#) Why being part of ICHCA is a strategic advantage
- [20](#) Critical asset overview
- [22](#) IAPH call for #IAPH2026 Sustainability Awards projects
- [23](#) The TT Club team



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Port authority bulletin

This bulletin aims to bring together the Club's port authority Members and the wider industry to share their insights and learning on all aspects of port authority risk. It includes TT Club claims experience and other industry data to provide an insight into the current risks facing those tasked with managing port authority activities.

The Club continually produces loss prevention reports and guidance related to port authority risk. This bulletin includes a selection of recent content as well as highlighting collaborative work with like-minded organisations.

All TT Club's loss prevention guidance can be found at www.ttclub.com/loss-prevention. Please email us at riskmanagement@ttclub.com or get in touch with your usual contact if you have any queries, ideas or suggestions

Foreword

The world's port authorities are fundamental to global trade. Their quays, jetties, docks, cranes, marshalling yards, warehouses and workboats provide the key link between the sea and land journeys that have always been undertaken by most international cargo shipments. But ports are facing unprecedented challenges, with unstable geopolitics, cleaner energy, larger ships, smarter technology and changing climate all reshaping their risk landscape.

This second issue of TT Club's port authority bulletin starts with the complex, multi-faceted challenge of building resilience into port operations. It then looks at two options for decarbonisation in ports, from onshore power supply at one end of the scale to using of electric work boats at the other. The overall goal is to be 'climate ready', for which TT Club has produced a new guide.

Other topics include how to manage the risks from sinking ships and saltwater crocodiles, and how a port in the UK to helping to train the next generation of workers in the offshore renewable energy sector.

**"The overall goal is to be 'climate ready',
for which TT Club has produced a new guide."**



Mike Yarwood

Managing Director Loss Prevention,
TT Club, London

Mike Yarwood is a Chartered Fellow of the Institute of Logistics and Transport, a Technical Specialist Member of the Institute of Risk Management and a Member of the Chartered Insurance Institute.



How to build resilience into ports

Ports are the beating heart of global trade, handling vast volumes of goods and raw materials that keep economies moving. Yet as the world becomes more interconnected and technologically advanced, these critical nodes face an ever-expanding array of risks, from natural disasters and cyberattacks to operational bottlenecks and geopolitical shocks. A recent review¹ published by a team from Arizona State University offers a timely and comprehensive look at how ports can build resilience in the face of these challenges.

Resilience is the ability to maintain or quickly restore operations when disruptions occur. For ports, resilience is not just about bouncing back from hurricanes or cyber incidents: it is about ensuring that the ripple effects of any disruption do not paralyse entire industries or economies. The Covid-19 pandemic, for example, exposed how even temporary port closures can lead to shortages, price surges and long-term economic impacts.

Evolving threat landscape

Recent events underscore that port disruptions can be triggered by an increasingly broad and interconnected range of risks. Natural hazards – hurricanes, floods, earthquakes and rising sea levels – continue to pose serious threats to port infrastructure and operations. Alongside these, man-made disruptions such as cyberattacks, equipment failures, labour disputes, and terrorist incidents remain persistent challenges.

However, *geopolitical instability has now become a defining feature of the threat landscape*. The ongoing conflict in the Middle East, and its spillover effects across global shipping lanes, has highlighted how regional tensions can rapidly escalate into supply chain shocks. Attacks on commercial vessels, rerouting around contested waters, rising insurance costs, and naval security interventions all illustrate how political unrest in one region can disrupt port operations thousands of miles away. TT's recent analysis of the conflict demonstrates how even indirect exposure – such as schedule unreliability, diverted cargo, and capacity shortages – can cascade across global networks.

At the same time, operational vulnerabilities such as labour shortages, congestion and inefficient legacy processes continue to cause significant delays. What is new is *the degree of interdependence between all these factors*. A cyberattack on a port's digital systems may compound delays already caused by regional conflict, while climate driven extreme weather events may coincide with geopolitical shocks, magnifying disruption.

The acceleration toward smart port ecosystems also introduces additional exposure. While IoT devices, automation and data-driven operations are critical to improving efficiency and sustainability, they simultaneously expand the cyberattack surface. Wireless networks, cloud platforms and interconnected operational systems

“What is new is the degree of interdependence between all these factors.”

can be exploited by increasingly sophisticated threat actors. As noted in recent research, between 2009 and 2019 the energy and transportation sectors experienced the highest number of cyber incidents, with ransomware attacks such as NotPetya causing hundreds of millions of dollars in losses and revealing the fragility of digitally dependent supply chains.

In this environment, *building resilience is no longer about preparing for isolated events* – it is about understanding and managing a web of interconnected risks where natural hazards, cyber threats, operational challenges and geopolitical instability interact in unpredictable ways.

Early warning and disaster management

To increase their resilience, ports around the world have invested in early warning systems and disaster management strategies. Predictive analytics, scenario modelling and simulation tools are helping these ports to anticipate and prepare for extreme events. For example, the vulnerability of [Port Miami](#) to climate-related disruptions has prompted investments in stormwater management and infrastructure upgrades.

A wide range of analytical and simulation models can be used to assess and enhance port resilience. They include reinforcement learning algorithms for optimising container stacking and resource allocation, network analysis to identify critical partners and vulnerabilities, and probabilistic models to estimate economic losses from port shutdowns or disasters. Such tools help port decision makers weigh the trade-offs between efficiency and resilience, and prioritise investments in infrastructure, technology and human capital.

The review also points to the importance of stakeholder collaboration and information sharing. Real-time data exchange among port operators, shipping lines and government agencies enables faster, more coordinated responses to disruptions.

Policy and regulatory developments

Governments are responding to the evolving risk landscape too, with various new policies and regulations. In the USA, recent executive orders empower port authorities to restrict access to digital infrastructure deemed insecure, as well as mandate stricter security protocols. For example, the [Port Crane Security and Inspection Act of 2023](#) aims to reduce reliance on foreign-made port cranes, addressing concerns about espionage and cyber sabotage.

Internationally, the [International Maritime Organization's verified gross mass mandate](#) and the UK's [Border Target Operating Model](#)

are both examples of regulatory efforts to enhance safety, security and operational efficiency.

Key takeaways for risk managers

The report concludes that improving the resilience of ports requires a multi-hazard approach, integrating climate, cyber and operational risks into a unified resilience framework. While automation and digitalisation are essential, they must be paired with robust cybersecurity and contingency planning.

Collaboration is seen as essential. Information sharing and joint exercises between public and private stakeholders will enhance preparedness and response. Keeping abreast of regulatory changes and aligning internal policies with national and international standards is vital too. Port risk managers should remember that resilience is not a one-off project but an ongoing process of learning, investment and adaptation.

Despite improvements in port resilience, the review identifies several gaps in the transport and logistics sector's understanding. There is limited research, for example, on the integration of human behaviour in automated port systems, and the economic interdependencies between major ports and regional supply chains need deeper exploration. The scalability of predictive models for small and medium-sized ports remains an open question too.

Conclusion

Building resilience in port operations is a complex, multi-faceted challenge. It requires investment in infrastructure, technology and people, underpinned by strong governance and cross-sector collaboration. As the risk landscape evolves, so too must the strategies for safeguarding the arteries of global trade.

¹ Redekar D, Askin R and Feng J (2025) [Maritime Port Supply Chain Resilience: A Systematic Review](#).



“Port risk managers should remember that resilience is not a one-off project but an ongoing process of learning, investment and adaptation.”



Neil Dalus
Risk Assessment Manager

Neil is a Risk Assessment Manager for TT Club's Loss Prevention Team. Neil joined TT Club in 2023 and has extensive experience managing port and port related infrastructure and assets, having 20+ years engineering experience, which includes Local Authority, Consultancy and 11 years in the Port Industry in various technical and engineering leadership roles.

Planning for onshore power supply

Ports and shipping lines need to explore every option to decarbonise their operations to reduce emissions and meet climate targets. One solution gaining traction in the ports sector is onshore power supply (OPS), also known as shore-side electricity or ‘cold ironing’. This allows ships at berth to switch off their fossil-fuel engines (so they go cold) and run on electricity from the shore, improving air quality in ports.

While OPS is now a mature technology, high costs and uncertain revenue models have slowed uptake worldwide. But incoming European legislation and mounting public pressure means ports can no longer afford to delay pushing the button on OPS – though it may not be that simple. From complying with regulations to overcoming infrastructure and operational challenges, the journey towards cold ironing needs careful risk assessment and planning.

New rules

The European Union has taken a bold step with [Regulation 2023/1804](#), requiring use of OPS for seagoing container and passenger ships calling at [Trans European Transport Network](#) (TEN-T) core ports by 2030. From 2035, the rule extends to any European Union (EU) port that already has cold ironing, not just TEN-T ports. The goal is clear: cut emissions from ships at berths by enabling them to plug into cleaner electricity rather than burning fossil fuels.

However, by mid-2025, only 20% of required OPS connections had been installed or contracted, with cruise terminals achieving 38% and container terminals managing just 11%. This gap reflects the scale of investment needed – Italy alone has budgeted €700 million for cold-ironing projects, while the Netherlands and UK have pledged hundreds of millions more.



Globally, Europe is the frontrunner thanks to binding targets and timelines. The USA, by contrast, has no federal mandate and adoption is still voluntary or state driven. Asia shows pockets of progress in China and South Korea, but lacks a region-wide framework.

Why OPS matters

Critics argue that OPS could become obsolete once zero-emission ships dominate the seas. But a 2022 CE Delft study commissioned by the World Ports Climate Action Program suggests otherwise.² The report concluded that OPS will remain relevant for decades, even as shipping decarbonises, due to cost advantages, air quality benefits and ongoing use of fossil fuels.

The study predicted that shore power will remain cheaper than onboard electricity generation using decarbonised fuels, at least in Europe and North America. Also, ships running on green ammonia or methanol can still emit pollutants like nitrous oxides and – even by 2040 – a significant share of maritime fuels will still be fossil-based.

In short, the report concluded that OPS is not a transitional technology: it is set to become a cornerstone of sustainable port operations.



Technical and operational challenges

Despite its promise, installing OPS is anything but straightforward – not least in terms of the huge increase in power needed. A large cruise ship requires a constant supply of up to 16 MW while a container ship can get by on 7.5 MW. By comparison, a port's existing electrical ship-to-shore (STS) cranes use only 1–2 MW when working – and this load can be balanced across several units. Supplying far higher levels of steady power to multiple ships simultaneously will require massive grid upgrades, large transformers and an array of specialised connectors.

Many ports already [lack sufficient reliable power](#), which means they will need to explore onsite generation, storage and microgrids to install OPS. More congested ports will also find it difficult to make room for the necessary OPS equipment as well as liquified natural gas tanks and hydrogen stations for alternative-fuelled ships. And while standardisation is desirable, the ‘any ship, any port’ concept will remain hard to achieve due to variations in connectors, voltages and frequencies – all of which complicate interoperability.

All the above challenges demand meticulous planning, robust safety protocols and ongoing staff training.

Risks and opportunities

The provision of OPS is a major strategic investment for ports, with long-term implications. These include new commercial and operational risks, for which port risk managers should seek appropriate [insurance cover](#).

Commercial risks include the possibility of stranded assets if the technology shifts, plus operational disruptions during retrofits and financial strain for smaller facilities. Examples of operational risks are the vulnerability of OPS systems to damage from berthing vessels and the added hazard of manually handling heavy electrical cables along the quayside during mooring. Ports installing

large-scale [battery energy storage systems](#) (BESS) to power OPS systems will also be introducing new safety and fire risks.

On the positive side, OPS will offer new opportunities for innovation and collaboration. Ports can leverage renewable energy integration, develop microgrids and pioneer smart infrastructure solutions – particularly by working with other port authorities, energy providers and ship operators to overcome technical and financial barriers.

Ports should note too that current EU regulations do not cover smaller ships, despite their suitability for electrification due to lower energy demands and simpler infrastructure needs. Average current port emissions could be reduced by around 55% just by installing OPS for smaller ships.

Conclusion

With European mandates looming and public pressure intensifying, OPS is no longer optional for ports worldwide. But success hinges on more than compliance – it needs a holistic approach that balances environmental goals with operational realities, safety considerations and economic viability.

Port infrastructure and risk managers need to start planning now. They need to assess the technical, financial and safety implications of OPS installation and engage stakeholders early. Cold ironing is not just about plugging in ships – it is about powering the future of sustainable maritime trade.

² CE Delft (2022) [The role of shore power in the future maritime fuel mix](#).



Harry Palmer
Risk Assessment Manager

Harry is a Risk Assessment Manager for TT Club's Loss Prevention Team. Harry joined TT Club in 2025 and has extensive experience in port engineering, with over a decade of experience in engineering consultancy, providing technical expertise on a broad range of matters within the ports and terminals sector. He has also provided casualty response and expert witness services with respect to port civil engineering and is a Chartered Civil Engineer.

“The goal is clear: cut emissions from ships at berths by enabling them to plug into cleaner electricity rather than burning fossil fuels.”

Electric pilot boats help ports to decarbonise

As highlighted in the previous article, the ports sector faces mounting pressure to reduce its carbon footprint. While much attention has focused on ships, smaller craft such as port work boats also contribute significantly to emissions. Decarbonising these operations is a vital step towards achieving broader environmental goals.

Pilotage services are essential for safe navigation in and out of ports yet have traditionally relied on diesel-powered craft. In a significant shift towards cleaner and greener operations, the [Port of Tyne](#) is due to take delivery of the UK's first fully electric foiling pilot boat in 2026. The investment positions the Port at the forefront of maritime decarbonisation and innovation, and reinforces its commitment to sustainability, operational efficiency and safety. It also aligns with the UK Government's [Maritime 2050](#) strategy.

The [Artemis EF-12 Pilot](#) is being built in Belfast in Northern Ireland by [Artemis Technologies](#). It combines hydrofoil design with electric propulsion, reducing drag and dramatically improving energy efficiency. This will deliver zero operational greenhouse gas emissions, supporting the UK's net-zero ambitions; enhance safety and ride comfort, thanks to improved stability and reduced motion; and reduce noise and vibration, creating better working conditions for crews.

As Matt Beeton, chief executive officer at Port of Tyne, explains, 'This investment is a clear demonstration of our commitment to sustainability and innovation. By adopting electric foiling technology, we are not only reducing emissions but also setting a new standard for pilotage operations across the UK.'

Environmental and operational benefits

The Port of Tyne's investment sends a strong signal to the industry: sustainability is not optional – it is a strategic imperative. By embracing electric foiling technology, the port is setting a precedent that others are likely to follow.

Beyond environmental gains, the new pilot boat offers tangible operational advantages. These include reduced fuel costs, as electric propulsion significantly lowers operating expenses, and improved crew welfare, as lower noise and vibration enhance comfort and reduce fatigue. Investing in clean technology also future-proofs ports, positioning them to meet evolving regulatory requirements and customer expectations. These benefits underscore why early adopters like Port of Tyne are likely to gain a competitive edge.

The EF-12 Pilot is expected to enter service during 2026, marking a milestone for UK ports. Its deployment will provide valuable insights into the performance and scalability of electric foiling technology in real-world conditions.

Insurance and loss prevention

For TT Club Members and stakeholders, the introduction of electric foiling craft raises several insurance and loss prevention considerations. For hull and machinery cover, it is important to ensure that policies reflect the unique characteristics of the electric propulsion systems. Battery safety is particularly crucial, as lithium-ion batteries require robust fire prevention and thermal management systems.

PORT OF TYNE



The boat's advanced electronic control systems could also increase its exposure to cyber threats, so it is important to implement strong cyber security measures. Crews will need to be trained and drilled on what to most of them will be new operational and emergency response procedures.

Loss prevention strategies should focus on regular technical inspections, comprehensive risk assessments before use and collaboration with manufacturers for ongoing support and updates.

Conclusion

The Port of Tyne's partnership with Artemis Technologies represents a defining moment for the UK ports sector. By embracing innovation and sustainability, the Port is charting a course towards a cleaner, safer and more efficient future. For the ports sector worldwide, it is a call to action: engage with emerging technologies, assess the risks and seize the opportunities they present.

As Matt Beeton concludes, 'This is more than an investment in a vessel – it is an investment in the future of maritime operations. We are proud to lead the way in driving positive change for our industry and our environment.'



Oscar Egerström
Commercial Director

Oscar Egerström is based in the London office as Commercial Director. He joined the TT Club in 2013 as Senior Claims Executive, transferring in 2018 to Underwriting.



“This is more than an investment in a vessel – it is an investment in the future of maritime operations.”

Artemis
TECHNOLOGIES

New guidance for ports on being ‘climate ready’

Notwithstanding efforts to decarbonise, the global supply chain is already under increasing pressure from climate-related disruptions. Ports, terminals, and logistics operations – critical nodes in international trade – are facing mounting risks from rising sea levels, extreme weather events and shifting climate patterns. Recognising the urgency, TT Club has released its latest white paper, *Climate-ready Supply Chain: Urgent Guidance for Ports, Waterways and Logistics Operations*,³ offering a practical roadmap for resilience.

In recent years, hurricanes, floods and heatwaves have caused USD billions in damages and widespread operational shutdowns. A 2023 University of Oxford study suggests that nearly 90% of major ports are exposed to damaging climate hazards, putting USD67 billion of trade at risk annually.⁴ Without decisive action, cascading climate impacts could cost the global economy up to USD25 trillion by 2060, according to 2024 research by University College London.⁵

“The global supply chain continues to evolve with technological innovation and consolidation. However it has experienced, and continues to experience, increasing disruptions as a result of climate change and geopolitical factors. Ports, terminals, and logistics operations, which are vital to economic prosperity and higher standards of living, underpin global trade and are being routinely exposed to climate-related hazards that threaten their operational models, safety and long-term economic output. Adaptation and resilience of global supply chains is therefore an essential consideration for all businesses.”



Marika Calfas
Director Through Transport Mutual Insurance Association Limited (Bermuda), CEO NSW Ports.

Structured approach

The TT Club white paper distinguishes between adaptation – meaning specific actions like elevating quay walls or reinforcing drainage – and resilience, which is the broader ability to absorb shocks and maintain functionality. It provides a structured approach for port operators to integrate climate considerations into their risk management and business strategies.

Key guidance includes:

- Understanding climate data: leveraging historical trends and predictive models to inform infrastructure design and operational planning
- Risk assessment and prioritisation: identifying vulnerabilities across assets, operations and workforce safety
- Adaptation planning: developing phased strategies for short-, medium- and long-term measures, from emergency response protocols to major infrastructure upgrades
- Practical solutions: implementing ‘no-regret’ options such as staff training, energy efficiency improvements and advanced monitoring systems
- Business integration: embedding climate risk into corporate governance and aligning with global reporting standards like [IFRS](#) and [GRI](#).

Case studies from leading ports – including [Rotterdam](#), [Long Beach](#) and [Brisbane](#) – demonstrate that proactive investment can reduce downtime by up to 30%, save billions in potential damage costs and enhance reputation, attracting green financing and stakeholder confidence.

Conclusion

TT Club’s message in its new white paper is unequivocal: building a climate-ready supply chain is not just compliance, it is a strategic imperative. By acting now, ports and logistics operators can safeguard infrastructure, maintain operational continuity and position themselves as leaders in sustainability.

TT Club’s message in its new white paper is unequivocal: building a climate-ready supply chain is not just compliance, it is a strategic imperative.



[Download the white paper](#)

³ TT Club (2025) [Climate-ready Supply Chain: Urgent Guidance for Ports, Waterways and Logistics Operations](#).
⁴ Verschuur J, Koks EE, Li S *et al.* (2023) [Multi-hazard risk to global port infrastructure and resulting trade and logistics losses](#). *Communications Earth & Environment* **4**, Article Number: 5 (2023).
⁵ Sun Y, Zhu S, Wang D *et al.* (2024) [Global supply chains amplify economic costs of future extreme heat risk](#). *Nature* **627**, 797–804.

How ports can limit the risk from sinking ships

The risk to port authorities from abandoned or uninsured ships and small craft is real and potentially costly. When a vessel sinks within harbour limits, and the owner cannot be traced or its insurance is inadequate, the port will have a legal duty to act on the resulting wreck. This may be to prevent pollution, clear navigational channels or protect business continuity.

The problem is compounded by the fragmented and complex regulatory environment for shipping. While large vessels are generally subject to international conventions and classification standards, loopholes and opaque ownership structures can leave ports exposed. Unsavory actors, shell companies and 'dark fleet' operations add layers of uncertainty. As a result, both small and large vessels can pose significant risks once they become unseaworthy or sink within port limits.

To avoid the costs and disruption of wrecks, ports should review their procedures regarding arriving vessels as well as their own insurance arrangements.

Wreck risks

When vessels become unseaworthy or sink, the port authority can face significant exposure:

- Environmental clean-up, including fuel removal, environmental protection and disposal fees
- Heavy lifting and salvage, including cranes, divers, and specialist salvors and equipment
- Business interruption, such as from blocked berths or channels
- Legal complexity, with unclear ownership and enforcement challenges
- Insurance gaps, with neither the vessel nor port covered for wreck removal

The cost of wreck removal and associated environmental clean-up can be staggering (see case studies). Heavy-lift cranes, specialist salvage teams and disposal fees quickly push costs into six-figure territory. In some cases, delays caused by ownership disputes or regulatory hurdles and compound expenses further – and an insurance gap can leave the port footing the bill. For ports operating on tight margins, these unexpected liabilities can have a significant effect on financial viability.

Vessels to be wary of

Ports often serve a diverse mix of vessels, many of which fall outside the strict inspection regimes applied to ocean-going ships. And with ports increasingly diversifying their businesses to stay competitive, new cargo types bring new and potentially higher-risk craft. Furthermore, the regulatory environment is highly segmented across vessel types, and sometimes bad actors mean even regular ocean-going ships can become a liability in port.

Smaller craft of less than 500 GT – such as fishing boats, private ferries, houseboats, leisure craft, barges and small workboats – may have limited or no insurance, and their hull policies might not include wreck removal. Limited classification schemes and infrequent vessel condition surveys may also lead to a higher risk of unseaworthiness.

For larger ships, while they are usually insured under comprehensive marine policies, problems arise when their ownership structure is opaque, their crews have not been paid, or they are sanctioned, flagged for convenience or have outstanding

Case study: Historic boat torpedoes profits

A coastal harbour authority faced an unexpected challenge when a 70 year old wooden-hull torpedo boat was brought into the harbour for restoration. Initially, the project appeared benign – a chance to preserve maritime heritage. However, the restoration stalled and the vessel was abandoned. Over time, neglect led to deterioration, and the boat eventually sank within harbour limits.

With no viable way to recover costs from the owner, the port authority were forced to assume full responsibility for removal. The operation required a floating crane to lift the boat from the seabed and transfer it to the quayside for disposal. The complexity of the lift, combined with environmental precautions, drove costs to approximately USD150,000.

Key takeaways:

- Even well-intentioned projects can become liabilities without clear contractual and insurance safeguards.
- Historic or non-commercial vessels may lack adequate insurance coverage.
- Ports should implement strict entry conditions for restoration projects, including proof of wreck removal insurance.

Case study: Abandoned tug cost USD325,000 to scrap

A 30m, 600 tonne offshore tug and supply ship, was one of three ships abandoned at the same time in a coastal harbour authority in the Asia Pacific region, posing both navigational hazards and pollution threats due to stored bunker oil. Ownership disputes and regulatory hurdles delayed decisive action, forcing the port and associated agencies into prolonged negotiations.

For this vessel, ownership was unclear. It was previously registered to a bona fide holding company, but no reliable details were forthcoming about current ownership. Pollution risk was mitigated early by removing bunker oil at a cost of USD145,000 (later reimbursed). The ship was then advertised for sale, but legal uncertainty stalled progress. Eventually, scrapping was agreed upon at a cost of USD325,000, which is still in progress.

Key takeaways

- Legal ambiguity over ownership delayed action and increased costs.
- Pollution risks required immediate mitigation, even before ownership was resolved.
- Scrapping costs highlight the financial scale of such incidents.

Case study: humanitarian act leads to long-term liability

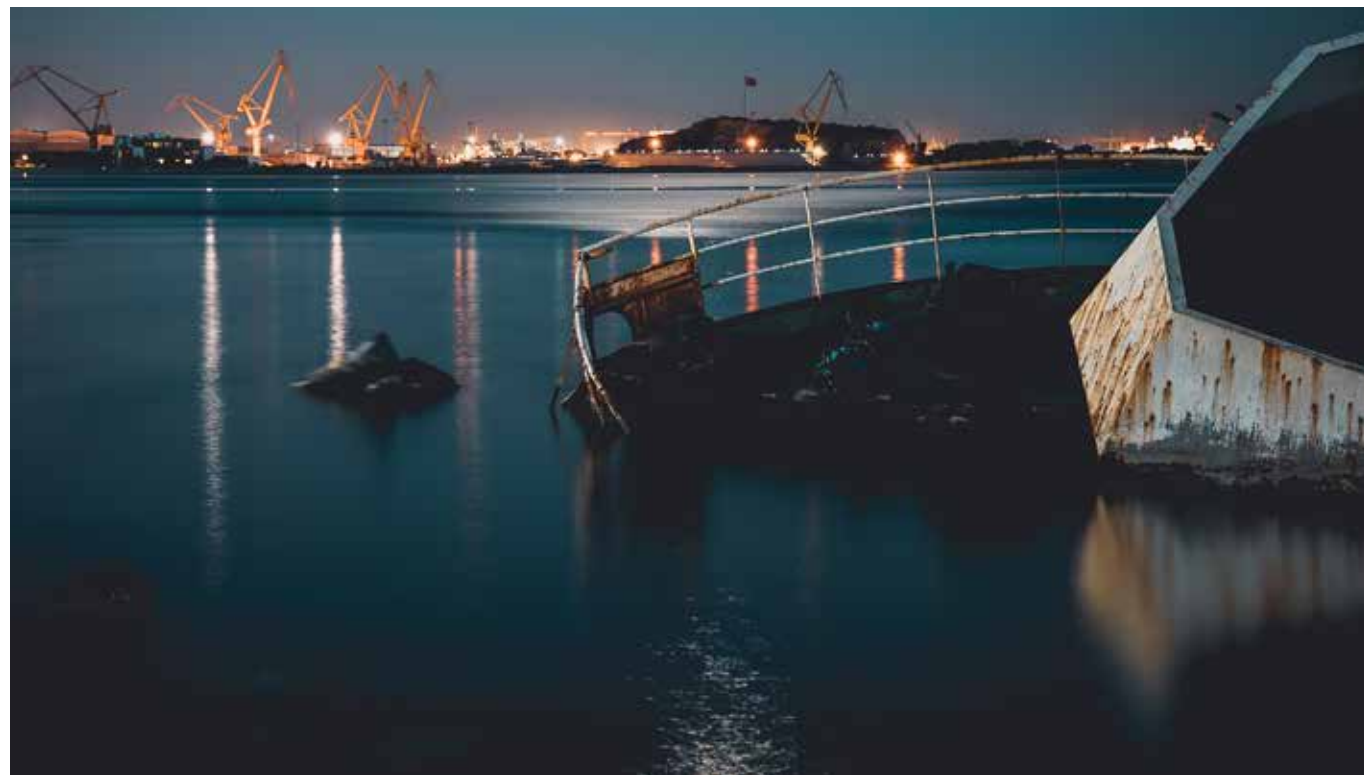
A 400 tonne, patrol ship, entered a large Middle Eastern harbour after a protracted discussion with the harbour authority. The crew had been deserted by the owner for nearly 2 years, left without food, water or wages. The port accepted the ship on humanitarian grounds, coordinating with local authorities – including the Coast Guard, Police and Federal Transport Authority – to ensure the crew's welfare. Within a few months the crew was repatriated.

However, the ship remained in port, unattended and uninsured. Ownership was unclear, and no party stepped forward to address unpaid wages or vessel removal. Regular inspections confirmed the ship was still afloat but, fast forward another 18 months, and it began taking on water. Emergency pumping started next day, but ultimately the port had to lift the hull. This required a heavy-lift crane, with initial cost estimates at USD145,000 per day, plus labour and disposal costs.

Key takeaways:

- Humanitarian decisions can create long-term financial exposure when ownership and insurance gaps exist.
- Ports should establish clear protocols for accepting distressed vessels, including contingency planning for abandonment.
- Regular inspections and early intervention are critical to avoid emergency salvage costs.





“Without proper insurance or ownership accountability, the burden of recovery and clean-up can fall directly on the port authority.”

conditions of class. Dark fleet operations further complicate liability. In addition, once a poorly maintained or abandoned vessel becomes unseaworthy alongside in port, simple removal or towage out of the port may be impossible due to class or flag state restrictions.

What ports should do

Ports cannot assume a vessel owner's insurance will cover wreck removal. The financial exposure to abandoned and sinking ships and small craft is real and growing, so proactive measures are essential.

Due diligence should be carried out before any vessel enters the port. Ports should confirm insurance cover is in place that includes wreck removal and pollution, and check the ownership structure and hull condition – typically through class and any outstanding conditions of class. Other information sources include the International Group of P&I Clubs [Vessel Search](#) resource and due-diligence portals such as [Rightship](#).

Ports should review their own [standard terms and conditions](#) to ensure they require minimum insurance cover and include the rights to refuse or expel vessels. Auditing or permit schemes should be implemented for smaller craft, which may include physical inspections to assess seaworthiness and safety.

Ports should also pre-plan their emergency response to wrecks, including finding and building relationships with local heavy-lift, salvage and diving contractors before a crisis hits.

Finally, given their potential exposure to abandoned and sinking vessels, ports should review their own [insurance arrangements](#). Coverage should include third-party liability for pollution and obstruction caused by wrecks, contingent coverage in case a vessel's insurer does not respond, and environmental clean-up costs including salvage operations and disposal. Ports should engage with their brokers and insurers to ensure all these risks are adequately addressed in their policies.

Conclusion

A sinking vessel can quickly become a six-figure wreck removal. Without proper insurance or ownership accountability, the burden of recovery and clean-up can fall directly on the port authority. Through diligent vetting, auditing schemes and robust insurance arrangements, ports can mitigate these risks and avoid costly surprises.



John Thomson
Senior Claims Executive, Director |
Regional Loss Prevention Lead (APAC)

John Thomson has 20 years' experience working for the transport and logistics industry. He holds qualifications in maritime law and workplace health and safety and specialises in risk and legal liability matters. Starting in 2026, John is now part of the TT Club loss prevention team, taking the lead for the entire APAC region.

Wildlife risk management in tropical ports

Ports operators need to manage many and varied operational risks, but some of the more unusual are those lurking in the waters and machinery spaces of ports in the tropics. Venomous snakes and spiders, and aggressive crocodiles and hippos, can all fatally attack port staff, contractors, seafarers and visitors. Given the potential suffering, operational disruption and cost of such attacks, effective risk management is essential.



Saltwater crocodiles

One of the most significant hazards in [Darwin Port](#) in Australia is saltwater crocodiles (*Crocodylus porosus*). The reptiles, which can reach 6.5 m long and weigh over a tonne, are highly territorial and aggressive. Attacks on humans occur annually, with one to two fatalities recorded in the Northern Territory each year – most recently involving a 12-year-old girl. They are strong swimmers, capable of travelling 70 km offshore and migrating between New Guinea and northern Australia.

Crocodiles have been protected in Australia since the 1970s, such that Northern Australia's population now exceeds 100,000, the world's largest. Darwin Harbour's tidal range of up to 8 m brings the reptiles in with the tide, resulting in regular sightings – even near Foreshore Wharf next to the central business district. They can also appear in unexpected locations, such as land reclamation ponds.

Given the potentially fatal risk of a crocodile attack, the Port incorporates crocodile management into its occupational health and safety (OHS) protocols. Measures include warning signage at high-risk areas and safety procedures detailed in the Port safety plan and on the Port's website.

Humane capture

When a crocodile is sighted and removal is necessary, the Port contacts the Northern Territory Government's Wildlife Management

Unit via the Crocodile Management Hotline. The unit then deploys traps to ensure humane capture, and most relocated animals go to licensed crocodile farms. During each wet season, between October and May, 200–300 crocodiles are typically removed from the Port area.

Environmental manager David McMaster has overseen wildlife management since joining in 2006. His remit covers an extensive area of over 1,000 km², stretching to Point Charles and including numerous estuaries. He says while most crocodiles found in the harbour are smaller juveniles, a 4.7 m crocodile was recently removed from Myrmidon Creek near Elizabeth River boat ramp. Missing part of its tail, experts estimate its full length could have exceeded 5.3 m.

He adds that crocodiles are not the only concern in Darwin, where snakes and spiders also pose hazards. Venomous species like the black whip snake were recently removed from the Port's rail conveyor by a contracted specialist. Even non-venomous species, such as golden tree snakes, can still cause infections through biting. These too have been found in port conveyor systems.

Conclusion

Managing dangerous wildlife in a tropical port environment is a complex but vitally important task. Effective risk management is essential to safeguard port workers and users, as well as to ensure the operational and financial resilience of port operations.



Port hosts new renewable energy training hub

To meet the global need to produce clean and affordable energy, there is a demand to increase the numbers of skilled and qualified workforce who can plan, deliver and operate in this emerging sector. For example, according to the 2023 *Offshore Wind Skills Intelligence Report*,⁶ employment in the UK offshore wind sector alone is forecast to triple by 2030 (Figure 1).

In response, a port on the UK's east coast has enabled the development and construction of a £15 million science, technology, engineering and mathematics (STEM) education and vocational training hub, which aims to help develop the next generation of people working in the offshore renewable energy sector.

Officially opened in June 2025, the new [Energy Central Learning Hub](#) is the first phase of the [Energy Central Campus](#) – a unique partnership between the [Port of Blyth](#), [Northumberland County Council](#) and the [Offshore Renewable Energy \(ORE\) Catapult](#). The partnership's mission is to create the pipeline of talent required for the expanding clean energy sector, at the same time as inspiring, training and delivering pathways to employment for the local community.

The Port of Blyth in Northumberland is one of the UK's leading offshore energy support bases. It is an important hub for the movement of a range of project, containerised, dry bulk and break bulk cargoes as well as a key location for offshore decommissioning. It is also home to the [National Renewable Energy Centre \(Narec\)](#), which opened in 2014 and is part of the ORE Catapult. A total of 115 energy-sector businesses are now based in the town.

New facilities

Located on Quay Road in the South Harbour Terminal, the new hub's facilities include specialist electrical and mechanical workshops, classrooms, a major regional STEM hub, digital skills training facilities, an immersive Clean Energy Visitor Centre, and conferencing and events space for up to 250 people.

The hub is expected to:

- help 3,500 young learners a year engage with STEM subjects through the region-wide STEM@EnergyCentral initiative
- accommodate over 800 learners a year undertaking formal qualifications including traineeships, apprenticeships, T-levels and short modular courses.
- welcome 5,000 initial visitors to the Clean Energy Visitor Centre in the first full year of operation, rising to 15,000 visitors a year over the next 10 years (source: Port of Blyth).

Energy Central Campus has partnered with local learning and academic organisations to offer courses to young people and professionals in the energy industry. The aim is to provide high quality training and education to support the sector and advance careers in clean technology.

A further phase, the Energy Central Institute, is set to open at the end of 2026. This will focus on higher-level skills and innovation, developing energy sector expertise at degree and PhD levels. It will create a focal point for collaboration between energy businesses, the ORE Catapult and north-east universities, helping to develop higher-level skills and technological innovations.

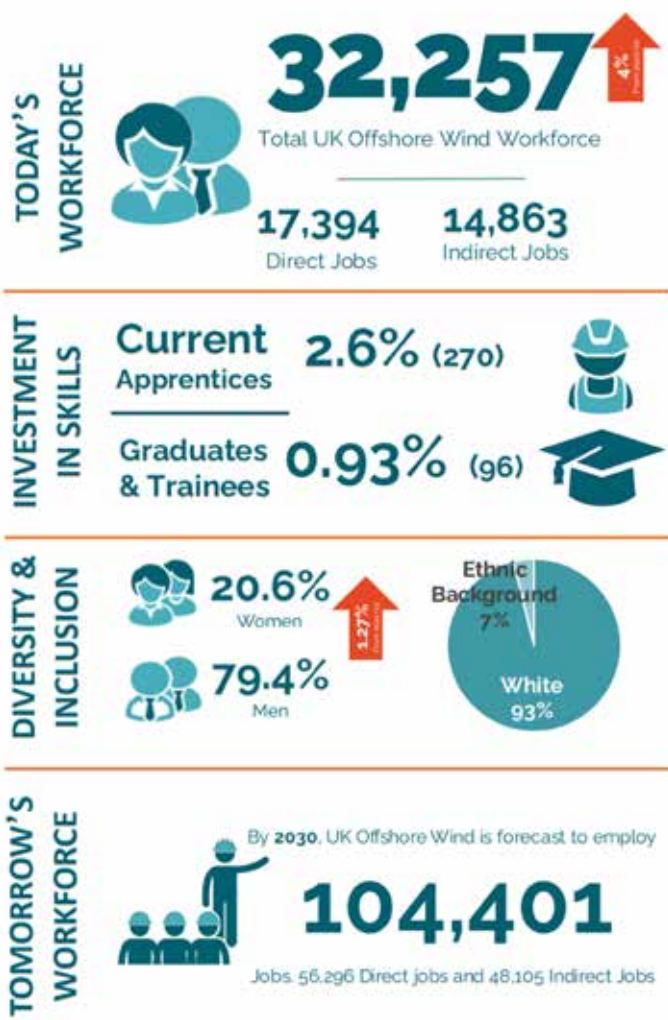


Figure 1 – UK offshore wind sector employment is forecast to triple by 2030⁶

Conclusion

By helping to provide facilities and staff to develop and teach essential renewable energy skills and carry out further research, Port of Blyth is helping society to meet its global needs to transition to clean and sustainable energy sources.

The Energy Central Learning Hub is also a great example of what can be achieved through a partnership approach. The local partnership with the Port, local authority and ORE Catapult was able to build a compelling business case to attract both local and central government funding to create a unique and much-needed training facility.

⁶ Offshore Wind Industry Council (2023) [Offshore Wind Skills Intelligence Report](#).



“UK offshore wind sector employment is forecast to triple by 2030.”

Figure 2 – The new Energy Central Learning Hub is in the Port of Blyth, UK

PIA's Port Industry Fatigue Working Group – New Zealand Workplace Health and Safety Award Winner

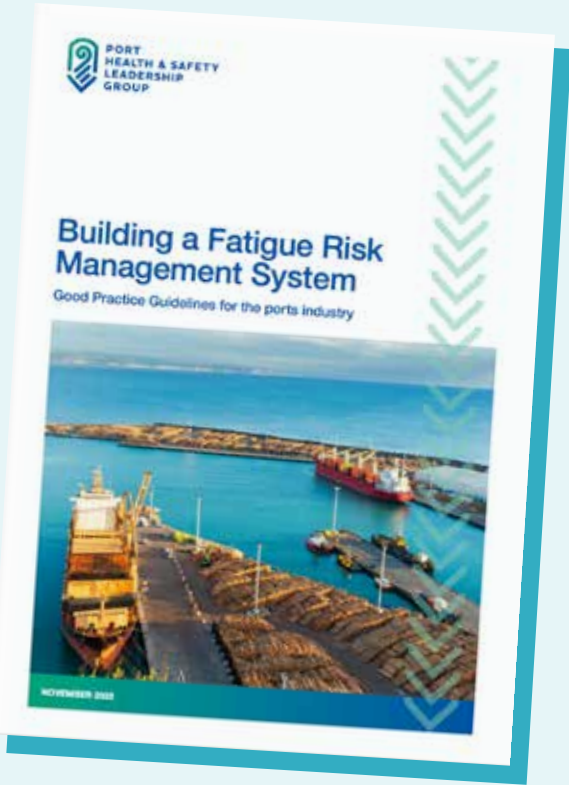
The Ports Industry Association (PIA), as part of the Port Industry Fatigue Working Group, was the winner of the Supreme Award at the 2025 Safeguard Awards for its fatigue management initiatives. This important development of guidelines to manage the risk of worker fatigue in ports seen the Port Industry Fatigue Working Group take overall honours at the 2025 New Zealand Workplace Health and Safety Awards.

Fatigue is a significant risk given the 24/7 dynamic nature of port work. The Working Group saw 28 organisations work together in consultation with international experts to develop the sector's first [fatigue risk management system guidelines](#) and an implementation plan to put them into effect.

PIA is the national industry body representing New Zealand's port, stevedoring and container parks sector. As a volunteer-led organisation, PIA brings together industry leaders and practitioners to deliver practical, industry-led solutions that support productivity, workforce capability, safety, and operational resilience across the sector. The Association's work is supported by five active sub-committees and a number of industry topic working groups.



Karen Fletcher, Rail and Maritime Transport Unit (left), Pat Kirk, Port of Tauranga/former chair of PIA (centre) and Tracey Bates, Maritime New Zealand (right)



Why being part of ICHCA is a strategic advantage

ICHCA is an independent, not-for-profit, which exists to improve safety, productivity and efficiency of global cargo handling and movement worldwide.

Essential voice for our industry

Proudly recognised as an official Non-Governmental Organisation (NGO) at the International Maritime Organisation; ICHCA is the only NGO representing the cargo handling sector in consultation with United Nations bodies including the International Maritime Organisation and UNECE.

Best in field technical authors

Our library of over 90 world class bespoke technical publications provides go-to, pragmatic, health and safety knowledge and advice for cargo operations.

Learning from and with people who are passionate about safe and efficient cargo operations

Our technical advice panel has over 80 experts. If an answer to your cargo handling safety question exists... find it through us.

ICHCA is the voice of international cargo handling



Mission and values

- Create safer, healthier cargo handling workplaces
- Sustainability through safety
- Passion to do the right things right
- Future of safety is not beyond the horizon
- Can change the ways we work for the better

Why should you be a Member?

We understand that business priorities evolve.

ICHCA works with you to deliver value for your teams and reflect your strategic objectives.

- Strategic Partner in Port Safety and Efficiency:** ICHCA provides technical expertise, regulatory advocacy, and global best practices to enhance safety and operational performance in cargo handling and port operations
- Global voice for safety and innovation:** as an ICHCA member, you have a voice in discussions at the International Maritime Organization, shaping global safety policies that affect daily operations
- Technical Expertise:** benefit from ICHCA's deep well of cargo handling expertise to address operational challenges, safety improvements, and compliance strategies
- Incident Learning & Prevention:** learn from real-world safety incidents shared across the ICHCA network to prevent similar issues in your global operations
- Networking and Collaboration:** engage in working groups and international events that enable you to contribute thought leadership while gaining peer insight
- Tailored Member Resources:** access exclusive reports, safety digests, regulatory updates, and resources relevant to your workforce and business
- Industry Challenges Require Unity:** As industry evolves, collaboration becomes ever more important. Your membership strengthens collective representation on key global safety and operational issues
- "Everyone Goes Home Safe":** supports your ongoing mission to protect people, property, and the environment

Contact us at: ichca.com | secretariat@ichca.com

Critical asset overview

Ship to Shore (STS) cranes

Ship to Shore (STS) cranes are among the most critical and capital intensive assets in any container terminal operation. With procurement costs reaching US \$10–12 million, service lives extending 20–25 years, and lead times of up to two years, this equipment represents substantial financial commitments. Just as importantly, they sit at the heart of cargo handling productivity. Their scale, complexity, and exposure to dynamic operational environments demand a robust approach to risk mitigation – one that prioritises operational integrity, asset protection, and, crucially, the safety of people working in and around the crane.

Understanding the asset and its risk profile

STS cranes – whether referred to as gantry cranes, portainers, or quay cranes – operate in one of the most high risk interfaces of the supply chain: the ship to shore transfer zone. Their lifting capabilities, ranging between 40–120 tonnes, combined with their sheer mass of 1,000–1,200 tonnes, create significant potential for catastrophic loss events in the event of malfunction, misoperation, or adverse conditions. Key risk exposures include collisions with ships or vessels' cranes, vehicle impacts beneath or around the crane structure, fire within the machinery house or electrical systems, and windstorm related incidents such as derailment or boom collapse.

From a loss prevention standpoint, the claims pattern reflects a consistent trend: low frequency, high severity events that often arise from preventable scenarios. Ensuring that operational controls, maintenance disciplines, and environmental safeguards are in place is therefore central to risk management.

Engineering controls and safety features

Modern cranes incorporate a range of engineering solutions to reduce risk. Anti collision sensors – both for gantry travel and boom movement – play a vital role in preventing crane to crane, crane to ship, and crane to vehicle impacts. Anti sway hoist systems enhance lifting stability, reducing the likelihood of load swing and consequent structural or cargo handling incidents. Snag load detection protects the crane against unexpected resistance, a precursor to structural overloading and potential collapse.

Fire suppression in the machinery house mitigates one of the most significant loss drivers: fires originating in electrical cabinets, hydraulic systems, or mechanical components. Similarly, weather resilience systems – including storm pins, tie downs, and wind monitoring – are essential defences against extreme gusts or cyclonic activity, which remain major contributors to crane failures worldwide.

“From TT Club’s perspective, resilience is achieved through a layered approach: engineering safeguards, robust operational controls, environmental awareness, and strong safety culture.”

Emergency egress provisions, operator cabins designed for visibility and safety, and robust access systems support worker protection – aligning with TT Club's overarching emphasis on reducing harm to people as well as assets.

Operational risk mitigation

Effective risk mitigation blends equipment capability with disciplined operational practice:

1. Collision prevention:

Accidents involving vessels remain one of the most costly categories of claims. Ensuring the correct alignment of ship and crane, monitoring vessel movement, and enforcing restricted access zones beneath the crane are essential. Use of anti collision systems must be supported by thorough operator training and regular functional testing.

2. Environmental vigilance:

Wind remains a major external hazard. Terminals must have clear cut off wind speeds for lifting, gantry travel, and boom positioning. Weather monitoring equipment only reduces risk when combined with enforced operational decision making.

3. Human factors:

Given the reliance on operator judgement, fatigue, complacency, and communication failures routinely feature in loss investigations. TT Club advocates rigorous competency frameworks, scenario based training, and culture driven reporting of near misses.

4. Maintenance and reliability:

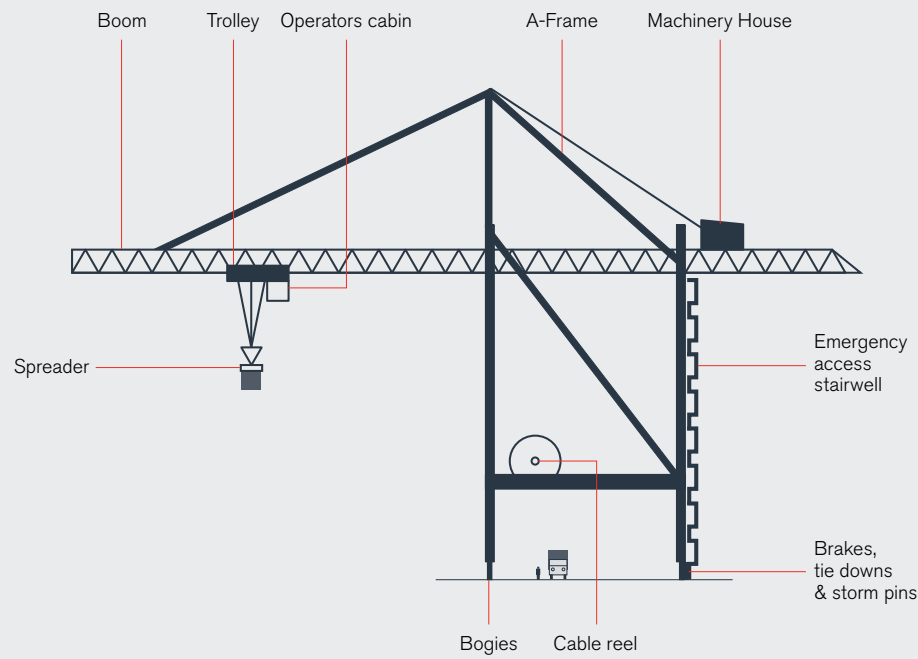
Unplanned equipment failure can result in structural damage, fire, or load handling incidents. Predictive and preventive maintenance schedules – supported by OEM guidance from manufacturers such as ZPMC, Liebherr, Mitsui/Paceco, Doosan Enerbility, and Kalmar – are essential to sustaining crane integrity throughout its lifecycle.

Conclusion

The STS crane is a critical enabler of terminal productivity and a substantial financial exposure. From TT Club's perspective, resilience is achieved through a layered approach: engineering safeguards, robust operational controls, environmental awareness, and strong safety culture. When these elements align, terminals can significantly reduce the severity and frequency of crane related incidents, protecting both people and assets while sustaining efficient operations.

Critical assets

Ship-to-Shore crane



Also Known As (AKA)

- Gantry crane
- Ship to Shore (STS)
- Portainer
- Quay Crane

Risk areas/typical claims

- Collision with ship or ship's crane
- Collision with vehicles
- Fire
- Wind storm

Leading manufacturers

- ZPMC
- Liebherr
- Mitsui/Paceco
- Doosan Enerbility
- Kalmar

Key Attributes

Drive system: Electric high-voltage or diesel dependant

Weight: 1000–1200 tonnes

Lift capacity: 40–120 Tonnes

Cost: US\$10–12 million

Service life: 20–25 year

Lead time: 2 years

Safety features

- Anti-trailer lift
- Snag-load detection
- Fire suppression
- Anti-collision sensors (travel & boom)
- Storm pins
- Tie-downs
- Weather monitoring
- Anti-sway hoist
- Emergency egress



Find it [here](#):



Read more...



This guidance document was published in collaboration with ICHCA and PEMA



Neil Dalus
Risk Assessment Manager

Neil has extensive experience managing port and port related infrastructure and assets.



Harry Palmer
Risk Assessment Manager

Harry has extensive experience in port engineering.

IAPH closes call for projects for its #IAPH2026 Sustainability Awards for ports

IAPH has closed the call for projects for the annual #IAPH2026 Sustainability Awards competition. Thank you to all IAPH member ports, and associate members acting on behalf of regular member ports, who submitted their sustainability projects and initiatives through the World Ports Sustainability Program (WPSP) online platform by the 10 June deadline.

Submitted projects will be evaluated over the July-August period by an independent jury of experts against the Awards' evaluation criteria. Projects selected among the top three in one of the six categories will be announced as finalists in September, and put forward for public voting for a period of one month on the [World Ports Sustainability Program website](#).

The most inspiring projects in each of the six Awards categories will be showcased during a dedicated ceremony at the gala dinner of the

#IAPH2026 World Ports Conference in London, held at the iconic Natural History Museum on 4 November.

Ports and their collaborators can find all information related to the 2026 Awards in this year's [terms of reference](#).

With more than 500 projects currently on the WPSP project database – the worldwide reference on port sustainability efforts – IAPH looks forward to highlighting this year's submissions and celebrating leading sustainability initiatives from ports around the world.

For any questions about the 2026 Awards, please contact IAPH technical and WPSP director [Antonis Michail](#)



IAPH 2026 Sustainability Awards Terms of Reference



WORLD PORTS SUSTAINABILITY PROGRAM



WORLD PORTS CONFERENCE 2026



iaph
International Association of Ports and Harbours



INFRASTRUCTURE
Sponsored by
REPS
Optimising physical port infrastructure



DIGITALIZATION
Innovative digital technologies in port management and operations



CLIMATE AND ENERGY
Sponsored by
LR
Facilitating energy transition in ports



COMMUNITY BUILDING
Leading on the societal integration of ports



ENVIRONMENTAL CARE
Sponsored by
BRITISH PORTS
Addressing environmental impact on air, water, soil, sediment, and natural habitats



HEALTH, SAFETY AND SECURITY
Sponsored by
TT
Integrating health, safety and security into the port business by matching efficient port operations and accessible port areas

Your TT Club Loss prevention team

TT Club's Loss prevention team is committed to the ongoing development of advice and information to make the global transport and logistics industry safer, more secure and more sustainable. We are committed to taking a central role in the industry, as an independent voice representing the interests of our Members and the wider industry.

- Our commitment includes:**
- Providing accessible technical and risk management guidance in various media
 - Analysing industry and incident data to identify, assess and communicate trends
 - Collaborating and participating with like-minded organisations to promote education and change
 - Evaluating emerging risks and championing effective innovative solutions (whether practical, digital or procedural)
- Our breadth of expertise covers all disciplines including legal and compliance risks, health and safety, technical issues and emerging risks for all modes.
- The aspiration:**
- To make the complex simple and deliver practical guidance to our membership and beyond.

- Resources include:**
-  **Monthly e-newsletter "TT Talk"**
 -  **Risk management podcast "TT Live"**
 -  **Topical briefings "StopLoss"**
 -  **Short, summary Toolbox guides "TT Brief"**
 -  **Joint industry risk reports**
 -  **Risk management webinars & seminars**
 -  **Expanding resource ESG Toolkit**
 -  **Risk management risk assessments**
 -  **Risk management risk maturity tool**

The TT Club team

Highlighting risk, reducing exposure, advising insureds, serving the industry.

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. TT Club's Risk Management team is committed to the ongoing development of advice and information underpinning this objective.

This includes:

- Providing support to reduce the risk of claims occurrence
- Promoting 'best practice' opportunities
- Helping to improve risk assessment, mitigation, and control



Find out more



Mike Yarwood
Managing Director
Loss Prevention
michaelyarwood@thomasmiller.com



Neil Dalus
Risk Assessment Manager
neil.dalus@thomasmiller.com



Harry Palmer
Risk Assessment Manager
harry.palmer@thomasmiller.com



Josh Finch
Logistics Risk Manager
joshua.finch@thomasmiller.com

