

# PORTS AND TERMINALS RISK CHALLENGES AND SOLUTIONS



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# 1. INTRODUCTION

Port and terminal projects and operations are exposed to a complex and changing range of risks. An evolving, and often unique, risk profile requires a balanced strategy to address risk mitigation. Such a strategy would include risk transfer through the use of traditional insurance policies, together with innovative solutions tailored to the specific requirements of the client.

Marsh is a global leader in insurance broking and risk management. Our Marine Practice is highly experienced and has been one of the leading sector specialists for more than 100 years, having a client base that exceeds 250 ports and terminals globally, ranging from small fishing ports to some of the largest port authorities and terminal operations. The size and prestige of our client portfolio can be attributed to our dedication to clients, our involvement in the marine industry, and the specialised and in-depth experience of our colleagues. We deliver individual advice and solutions designed to respond to financial, construction, and operational risks, and we provide practical steps and considerations to help port and terminal sector clients obtain the most cost-effective solutions and optimal protection against the many risks they face.

Our specialist ports and terminals resources are characterised by:

- A specialist team dedicated to handling all specific property and liability requirements of ports and terminals clients.
- Access to insurance facilities negotiated with leading underwriters worldwide to help achieve the best possible insurance coverage and pricing.
- Risk consulting and engineering teams, who advise on risk reduction and risk management techniques.

Our value proposition for ports and terminals can be summarised as follows:

- We use expert analysis to define each client's individual risk profile and we test the strength of existing responses, based on the specific challenges that confront a port or terminal project/asset.
- We look to achieve risk mitigation and an optimal balance between risk retention and transfer, and we make adjustments when circumstances change, through expert advice and by introducing complementary resources.
- We provide our clients with optimal advice, which ensures that the most suitable coverage can be placed and maintained. This is delivered using benchmarking techniques, exceptional presentation of client risk, and in-depth knowledge of what is achievable in the insurance market.

## LIFE-CYCLE RISK

Marsh's approach is based on the concept of life-cycle risk, which refers to the changing pattern of a client's risk profile, from initial project development through the planning, design, financing, construction, and ultimately, many years of operation. By acknowledging that the challenges and risk profile of an individual stakeholder to any project will change throughout the life of a project, our approach provides deeper insight into how risk issues and solutions can span multiple phases of the project.

## INDUSTRY SPECIALISATION

Marsh's approach consolidates our expertise by industry. This industry framework allows us to provide a high level and consistent delivery of solutions and services to organisations that operate in multiple geographies and/or on diverse investment projects.

Each of Marsh's industry practices is pre-eminent in the design and delivery of innovative risk and insurance solutions, addressing the often complex risks inherent to infrastructure development and operation.







# 2. STAKEHOLDERS

The risks inherent in a port development project or investment can be challenging and have far-reaching consequences for every stakeholder. In many cases, stakeholders will be largely aligned in their perception of risk. However, differences in risk tolerance can lead to divergent approaches to risk allocation and mitigation measures.

Marsh helps clients meet their objectives by applying a highly structured approach in understanding the individual risk profile of a development or investment. We also ensure that the contractual structure, agreed between all stakeholders, provides an equitable allocation of risk, resulting in an optimal and cost-effective balance of risk-retention and risk-transfer solutions throughout an investment or asset-life cycle.

## PUBLIC SECTOR

**Responsibility:** Protect the public interest and government assets through the life cycle of major projects.

**Delivery:** Manage mitigation and reduction of public sector risk to projects, resulting in the successful deployment of equity and public, private, and debt capital, improved contractual protection, project delivery, and operational oversight.

## OWNERS/EQUITY INVESTORS

**Responsibility:** Maintain a competitive edge while protecting investors' interests and satisfying contractual requirements agreed with customers, other stakeholders, and capital providers.

**Delivery:** Identify and quantify the pricing and transfer of risk to improve valuations, protect assets, and reduce the volatility of cash flows required to optimise operational performance, service fixed contractual obligations, and debt repayment.

## LENDERS

**Responsibility:** Ensure that an in-depth risk review has been undertaken, assessing long-term suitability of borrower risk-retention and transfer strategy to protect lender interests.

**Delivery:** Identify gaps between project risks and the borrower's risk-retention and transfer arrangements; facilitate ongoing lender protection through borrower risk and insurance compliance provisions in finance and project documentation.

## CONTRACTORS

**Responsibility:** Deliver a project within time and budget, managing contingencies and controlling the cost of capital.

**Delivery:** Adopt a highly structured approach to the identification, evaluation, allocation, and management of significant and emerging project risk issues, and develop an optimal and cost-effective balance of risk retention and risk transfer that is supported by authoritative market knowledge and benchmark data.

## PROFESSIONAL SERVICE PROVIDERS

**Responsibility:** Deliver architectural, engineering, and design consultancy with confidence in managing contractual, reputational, and geographic risks.

**Delivery:** Provide the most thorough and bespoke range of professional indemnity policy cover available in the global marketplace, coupled with superior claims handling service capabilities.

# 3. RISK THROUGHOUT A LIFE CYCLE

## CONCEPT

The ability to manage risk efficiently decreases as a project life cycle proceeds; therefore, a project's development/concept phase is an important time to implement an effective risk management framework.

Risks in this phase of a project can include:

- Poor scoping documents and lack of stakeholder input to project objectives.
- Insufficient time or budget allocated to feasibility studies.
- Inadequate site investigations, resulting in uncontrolled cost growth.
- Insufficient information in pre-design packages.

Other risks more specific to risk management planning are unique to organisations. However, to ensure risks are allocated to parties best suited to address them, they should be addressed in a project's development/concept phase, including:

- Lack of a structured risk management framework to identify and manage risks.
- Lack of transparency in key decision processes.
- Project objectives not aligned with the risk management plan.
- Undefined risk appetite for pre-design concept studies.

The earlier our input is sought in the process of managing a new terminal project, the more support Marsh can provide. Our clients repeatedly find that an early discussion of coverage options allows them to make more efficient conceptual and contractual design decisions throughout the duration of their projects.

The practical experience of Marsh colleagues goes beyond the insurance intermediary field into engineering and contractual support. Open discussions around the practicalities involved in the various risk-allocation options provide insight that enables the project team's negotiators to line up contractors in the most cost-efficient way prior to any site preparation.

In addition, Marsh can provide insight into legal considerations related to a project's construction logistics and to the future operations, which will provide internal and external parties involved, whether private, commercial, or municipal, with the confidence they need.

The impact of international conventions proposed by the International Maritime Organization can be significant, as can proposals to change existing conventions; sometimes affecting the physical design specifications or operations. Marsh can provide the necessary insight into these emerging risks.

Examples include:

- New laws regulating ships' emissions are creating demand for liquefied natural gas (LNG) or other "clean" fuels to be available in ports.
- The Maritime Labor Convention requires the inspection/detention of lay-berths.
- The implementation of more detailed port security in safety planning, has resulted in increased emphasis on site designs.



## PLANNING

The planning phase in a project's life cycle involves many issues that can be attributed to the complexity of collaboration between multiple stakeholders. The decisions made at this stage will have an impact — or not — later in the project. During this phase, a project may be halted or cancelled if financial terms and conditions cannot be met, the procurement process fails, or technological risks are deemed too high. The following are risks common to most stakeholders in this phase:

- Insufficient information to quantify the risk and calculate risk/reward.
- An inability to systematically identify high-risk bids during the procurement process, and the inclusion of legal and technical risks in the vendor selection.
- The procurement strategy not being in line with risk transfer in insurance contracts.
- The use of unproven technology and/or suppliers.

Sufficient time must be allocated to analysing these risks to allow a bespoke risk-transfer programme to be structured and marketed before construction begins.

## PORT/TERMINAL OPERATORS

Marsh assists operators in understanding, quantifying, and managing insurable risk exposures arising from proposed or actual ownership and operation of a port or terminal asset, including exposure to past, current, and potential liabilities. We also assess whether the insurance cover proposed for the project addresses risks appropriate for an international port or terminal operator, including non-damage business interruption. We also analyse the length of the business interruption insurance indemnity period, whether the insurance cover is compliant with insurance provisions contained within key commercial contracts entered into, the scope of insurance cover in respect of contract works that are the responsibility of the owner, and the adherence with statutory requirements to purchase insurance cover.

## LENDERS

In structured finance, the lenders are primarily concerned with the revenue-earning capability of the port – anything that may impact its ability to operate in accordance with its business case and financial model, and its exposure to liabilities. The lenders will take security over the assets of the port, which includes the insurance and insurance proceeds. Common issues that arise include the entire supply chain and, in particular, the supply of the key lifting and handling equipment: who has risk and title, who procures the insurance during transit, during erection, testing, and commissioning, and who is the recipient of the insurance proceeds?

Quite often the largest insurance-related delay in start-up risk is the transit of the ship to shore cranes and container stackers. Meeting the needs of lenders for delay in start-up and insurance proceeds needs to be taken into account when negotiating the crane supply agreements. Lenders may even want to limit the number of cranes transported on any one vessel, which may result in an increased shipping cost.

Similarly, lenders will want the port to be indemnified under the marine contractors' protection and indemnity insurance. Failing that, they will need some contingent marine liability cover during dredging and marine construction utilising marine craft. This is typically overlooked when employing marine contractors.

Our structured finance team provides independent insurance and risk consultancy services to the providers of senior debt to structured finance projects worldwide, who may be providing up to 90% of the finance for the project and, therefore, have the most to lose if the project fails.

We assist lenders in negotiating an appropriate insurance programme for the construction and operation of the project, and advise on the management and mitigation of significant uninsured risks.

Reviewing and commenting on the allocation of risk under the principal contracts is part of our role.



## CONSTRUCTION

Port development projects typically involve a mixture of onshore construction, buildings, warehouses and other facilities, and marine construction of jetties, breakwater, and quay walls, etc. (which are known as “wet works”). Due to the wide variety of unusual perils to which wet works are exposed, including extreme sea conditions and natural catastrophe, many construction insurers choose not to underwrite such risks, or instead offer low levels of capacity. The proportion of onshore construction to wet works, and the location of the project itself, will have a significant bearing on the perceived insurance risk, which means an understanding of risk exposures is all the more important in order to achieve the optimum risk transfer at the most competitive pricing.

The construction of warehouses and other onshore buildings and facilities are seen as very straightforward risks by insurers with both a relatively low risk of loss and relatively low associated insurable values. However, the arrival of cargo handling equipment onsite, typically during the later stages of the construction project, represents a delayed but significantly heightened buildup of values that insurers will focus upon. At that time, any insurance provided by equipment suppliers within the contract price should be taken into account to negotiate the optimal terms for the project.

## DESIGN EXPOSURES

The adequacy of the criteria used for the design of the completed works is a crucial element of wet works projects. During the construction phase, uncompleted works exposed to actions of the sea or tide will be more susceptible to loss or damage. Moreover, a structure designed to withstand a one-in-fifty years storm is more likely to be less robust during construction than a structure designed to withstand a one-in-a-hundred years storm, and the former storm is more likely to occur during a three-year construction period than the latter.

Each pier, jetty, or wharf has to be designed in its own right to withstand varying conditions and exposures, while the design of the project, as a whole, must also be integrated. It can be a complicated puzzle with a number of different design aspects playing important roles.

Detailed knowledge of the geology and soil conditions is crucial for the adequate design and construction of marine works. Ideally, the soil investigation programme will be developed by an expert familiar with local conditions and the marine environment. Special attention must be paid to hydrographical and hydrodynamic surveys (for example, tides and currents.). Calculations relative to the interaction of waves with the new structures will be based on the assumption that water level measurements and oceanographic and engineering data collection is established and dependable.

The level of detailed design in marine engineering projects may be higher than in other civil engineering disciplines because the physical processes are so complex.

## NATURAL HAZARDS

Most natural hazards are not entirely unexpected and can, to varying degrees, be mitigated. However, less frequent extreme events are much harder to predict and consequently manage. Natural disasters, such as earthquake, volcanic activity, windstorm, flooding, and tidal wave, can cause devastating damage to projects during construction.

### ACTIONS OF THE SEA OR RIVER, FLOOD AND INUNDATION, WINDSTORM

Repeated or intense wave or current action can cause erosion and damage to marine structures, and can affect their structural stability.

### EARTHQUAKE

Earthquake may be an important risk factor during construction. Significant damage to marine structures was caused by the liquefaction of reclaimed land, following recent earthquakes in Japan when the stability of quay walls was impacted due to the subsidence and displacement of caissons into the sea.

## PROXIMITY TO OPERATIONAL SHIPPING

It is common for port construction projects to entail either an expansion of an existing facility, or to be part of one or more phases of development and, therefore, often take place in close proximity to operational shipping channels, thereby presenting additional risk factors.

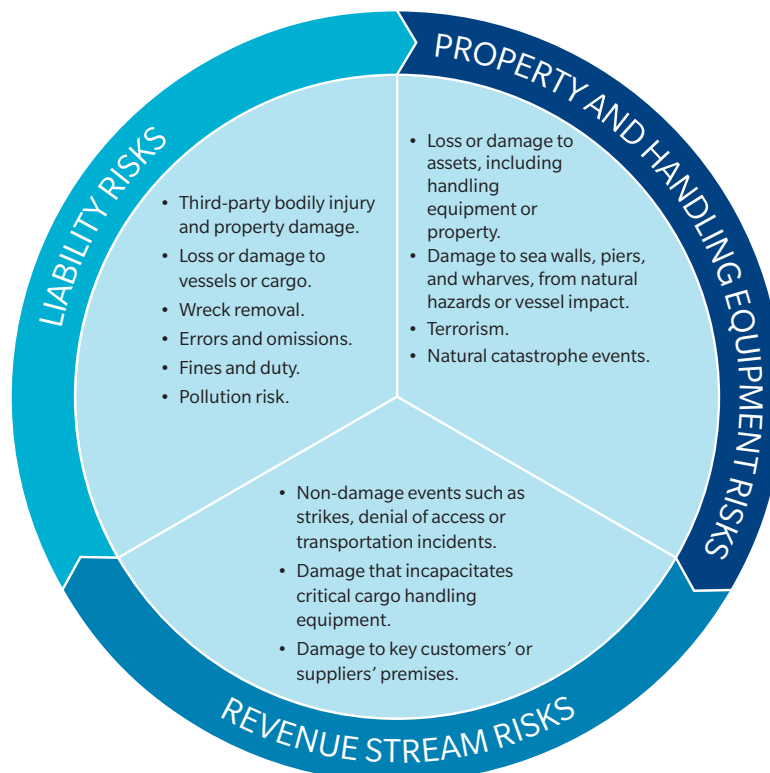


## OPERATIONS

As ports and terminals become increasingly sophisticated intermodal hubs for distributing goods worldwide, the risks they face on a day-to-day basis are larger and more complicated than ever before. They require substantial investment in marine structures, specialised high-value equipment, warehousing, and logistics. Added to this, the potential for claims, whether from shipowners, cargo interests, or other users of the port or terminal, has increased significantly, due in no small measure to an increasingly litigious world where contractual obligations can impose onerous liabilities on the port landlord or the terminal operator.

Established ports are faced with a number of significant risk exposures, as well as complex ownership or stakeholder arrangements, making it vitally important to have appropriate cover in place.

## KEY RISKS



## FINANCIAL SECURITY

Many ports do not realise their financial vulnerability to the blockage of access channels or quays, and may not have fully studied the alternatives that might be available to them. The arrangement of such alternatives, coupled with the appropriate insurance, can provide comfort not only to management, but also to investors and banks, particularly those involved with new developments in the port or terminal.

## MAJOR EXPOSURES

Established ports may be vulnerable to major exposures, which include:

- Employers' liability and workers' compensation, in which claims may materialise many years after an actual event. Health problems such as back injuries resulting from moving cargo, or exposure to base metals or asbestos, are just two examples of this type of exposure.
- Jetties, quays, or piers, which may historically have held base metals and other contaminants (for example, areas around oil storage tanks), could require cleaning. Insurance against further contaminant release during such operations becomes vital to reassure both authorities and the local population that the operations will be successful and will not involve further risk.
- Ports and terminals often find that demand outstrips the existing facilities and see a need to expand into neighbouring greenfield sites, which may engender a negative reaction from local residents and environmental lobbyists.

## MERGERS AND ACQUISITIONS (M&A) CONSIDERATIONS FOR OPERATIONAL PORT AND TERMINAL PROJECTS

Operational port and terminal projects are often the subject of M&A activity, whether through the sale of a minority shareholding, change in control of a business, or government-sponsored privatisation. Marsh's strong experience in this sector positions our global team to optimally advise clients during an M&A process, supported by the application of a due diligence process and other capabilities that can address broader transactional risks and provide solid insurance-backed solutions.

In a typical due-diligence review, we would seek to advise our clients on key issues, including:

- Whether the insurance coverage arranged by the seller addresses the risks faced by an international port or terminal operator. In addition, non-damage business interruption, the length of the business interruption insurance indemnity period, the compliance of cover with insurance provisions contained within key commercial contracts, the scope of insurance in respect of contract works that are the owner's responsibility, and the adherence with statutory requirements to purchase coverage are addressed.
- In case of a privatisation, an overall evaluation of a target's existing insurance programmes is conducted, which provides findings and commentary regarding such programmes, including where they may conflict, overlap, or leave gaps in coverage (both uninsured or underinsured risks), and the extent to which there is a need to insure those risks. This will include:
  - Analysis of historical losses.
  - Pricing of the current insurance programme; how competitive is this operational cost to the business?
  - Review of (insurance) risk management procedures in place and whether any key risk management solutions will need to be considered after completion of the transaction.
  - Advice on the specification of improved or replacement insurance cover programmes, where any deficiencies in current insurance arrangements are identified, including estimated costs of implementing these recommendations at completion of the transaction.
  - Review of insurance matters, including but not limited to, insurance provisions to be negotiated under the proposed concession agreement and reflected in any financing documentation as required by the client or by lenders.





# 4. RISK AND INSURANCE SOLUTIONS

## RISK ADVISORY SERVICES

With 50 years' experience of working with clients in the port industry, Marsh Risk Consulting (MRC) provides advice, analytics, tools, research, and solutions for a wide range of risk issues and is perfectly positioned to help port operators and shipping companies better understand their risk profiles and obtain appropriate protection.

Marsh's dedicated advisors help our clients manage the complete cycle of risk. We offer innovative risk solutions that help our clients:

- Assess, quantify, and mitigate risk to improve economic outcomes.
- Optimise insurance and risk-financing investments.
- Meet strategic objectives.
- Fulfill governance demands.

MRC offers the following services to help port operators and users manage their risk exposures:

**Strategic risk management** – The global nature of port operations makes companies susceptible to risks, including natural catastrophe, terrorism, operational stress, joint venture failure, political risks, and counterparty failure.

We support company executives by using a structured methodology to identify, define, and assess the risks to their business strategy, financial performance, and operational effectiveness.

**Enterprise risk management (ERM)** – The complex nature of some port operations can mean higher operational costs, including those for energy, labour, and transportation, safety, security, and environmental exposures. ERM can help operations deliver value in these often challenging environments.

An MRC-designed ERM framework can support the alignment of strategy, processes, people, technology, and knowledge to facilitate the evaluation and management of the daily uncertainties a port operator faces. This provides "best-in-class" management information to support decision making.

**Supply chain management** – We help companies understand potentially critical failure points, such as wharves, cranes, pilot, and tug services, and lead time for essential plant and machinery.

We help with the allocation of appropriate risk management strategies to achieve more adaptive and resilient supply chains by:

- Helping clients understand the key risk exposures, not only in their own supply chains, but also of their suppliers.
- Providing options and alternatives via a risk management plan that reduces the potential exposure to their businesses (including pricing and modelling).
- Helping clients execute a risk strategy in collaboration with key suppliers.
- Providing risk-transfer options for critical risk exposures in the supply chain.

## INSURANCE SOLUTIONS

Marsh transacts risk issues as an advocate and intermediary for our clients in the insurance market. Our market presence and global reach ensure that our specialists have access to cutting-edge knowledge, innovations, and solutions. Our capabilities are applicable to a variety of project-delivery methods from design-bid-build programmes to a variety of public private partnerships and privatisations. With specialist teams across the globe focused on the design and delivery of bespoke insurance cover to meet specific requirements of a project or investment, Marsh is a leader in providing cover to address:

- The professional risks of architects, engineers, and other professionals engaged in project development.
- Project construction risks, including delay in start-up and marine transit, whether insurance arrangements are owner or contractor-controlled.
- Operational infrastructure assets, revenues, and liabilities throughout the life cycle.
- End-of-life decommissioning of assets.
- Surety risk.
- Weather risk.
- Environmental risk.
- Political risk.

During the construction phase, insurers will typically request certain exclusions in relation to marine works in order to mitigate their exposure against losses, which may occur specifically due to the interaction of adjacent waters with the construction project. In most cases, these exclusions can be extremely onerous and will reduce the indemnity available to the insured under the policy. Marsh is consistently successful in negotiating a considerably improved and market-leading level of “wet works” cover for our clients, both through the use of Marsh-developed clauses and through our technical emphasis on the engineering factors already in place to mitigate such risks. In addition, Marsh has developed a number of extensions to cover that are designed to insure ancillary risks specific to marine works developments, and which provide premium savings or coverage that would not typically be provided by other conventional insurer wordings.

If there is a phased handover of the works to an operational programme, we would expect to secure credit from insurers as each stage of the project is completed. However, the nature of a phased hand over will bring an increased risk to the remaining construction works, as hazards to and from third parties are aggravated when neighbouring parts of the works become operational while the contractor continues to work.

When the facility is operational, our dedicated ports and terminals team has the ability to define the unique risk profile of each port and the expertise to test whether the risk-transfer or risk-mitigation solutions already in place are effective.

Our extensive client list enables us to compile benchmarking data to support negotiating positions and help clients make more informed decisions. It also means that we can share best practices by analysing indemnity limits, claims trends, and risk-retention levels across the peer group.

Combining this expertise with the exceptional presentation of risk to the insurance market and detailed knowledge of what is possible, enables us to continuously deliver the most appropriate cover at an optimal price for all our clients.

## NATURAL CATASTROPHE RISK

We have a very clear view of best practice in relation to natural catastrophe risk management and transfer, as is demonstrated by our NAT CAT Pack. From the identification of the natural hazard exposure for ports themselves as well as major routes and interdependencies in the value chain, through to business continuity and claims support when required, our approach helps our clients to do as much preparation as possible to bolster resilience and minimise losses. With a specialist view of natural catastrophe risks, we can draw together the relevant resources to help you mitigate the risk.

## BUSINESS ANALYTICS

At Marsh, we believe that business analytics provides for informed decision making. We invest heavily in business analytics to help our clients assess the competitiveness of their current programmes and evaluate their options for programme structure, specifically related to establishing retention and limit requirements.

We help organisations filter through the vast amounts of available data and find risk information to help guide their strategic risk planning.

The principal tools we employ include data from our extensive Global Benchmarking Portal; actuarial, statistical, and financial analyses; decision modelling; and the Marsh Analytics Platform (MAP).

Marsh created MAP and a new mobile-based application, iMAP, to meet this need. iMAP gives you easy access to Marsh’s industry-leading analytics, enabling you to better understand volatility and ultimately drive better strategic risk management decision making.

With the award-winning iMAP application, you can harness data together with Marsh’s proprietary benchmarking information to identify risks and their potential impact, determine risk tolerance and appetite levels, simulate loss potential for your unique risk profile, and dynamically model risk-transfer alternatives to evaluate effectiveness and identify optimal solutions. Essentially, iMAP helps you to lower your total cost of risk.

The platform and application are supported by Marsh Global Analytics’ (MGA) three Centres of Excellence:

**Risk Economics** – Using sophisticated analytics as the basis for risk-financing decisions has become increasingly important to managing today’s businesses. MGA Risk Economics provides risk financing optimisation, analysing optimal risk transfer, and insurance structures to lower the total cost of risk, thereby helping you to structure insurance programmes in the most economically efficient manner, while meeting the risk tolerance goals of your organisation as a whole.

**CAT Modelling** – Earthquakes, hail, floods, typhoons, hurricanes, and tornadoes are among the most catastrophic forces of nature, while terrorist attacks and pandemics are wildcards that could be costly should they occur. In many countries and jurisdictions, employers’ liabilities, such as workers’ compensation following a disaster, often exacerbates losses. CAT modelling uses industry-leading modelling software to evaluate exposures to help you to better understand and quantify these risks.

**Benchmarking** – Benchmarking is one of the key tools used to make informed risk management decisions. At the core of many of our risk analytics services lies our comprehensive benchmarking database. Marsh’s benchmarking experts have created a dedicated Global Benchmarking Portal, where we can analyse thousands of transactions to depict insurance structures for peer groups and market trends in purchasing and pricing. We can create custom benchmark reports for you based on this powerful data, which supports negotiations with insurance carriers and helps you to make more informed decisions.







## CLAIMS MANAGEMENT

Securing the maximum and prompt payment of your claims, especially for challenging and complex losses, is ultimately the reason you buy insurance. Our Claims Practice has a wealth of experience in the ports and terminals sector, and the combined resources that Marsh can make available to our clients at the time of a loss are vast.

### INDUSTRY EXPERIENCE AND EXPERTISE

- At Marsh, we understand the complexities of supply chain risks and are experienced in the business of port authorities and terminal operators, and the different risks they face.
- We have a global network of claims practitioners who support our global ports and terminals business.
- The Transportation Practice assists advocates from across all sectors at Marsh in sharing claims information and trends in the transportation network.

### MARSH APPROACH

- Emergency response – we appreciate that the early stages following a casualty can be critical and offer support in finding the appropriate experts to assist should they be required.
- We are familiar with the various policies available from the insurance market and provide assistance with bespoke claims reporting procedures.
- We offer scenario testing, where we review potential claims and the policy response and also actively participate in any drills.
- We offer strategic advice to clients in the presentation and management of any claim.
- We have a commitment to prompt claim collection.

### CLAIMS ADVOCACY

Our claims advocates provide strategic advice to clients both pre- and post-loss and negotiate the most challenging claims with insurers.

The claims advocates will usually be involved with a client prior to the inception of an insurance policy, providing technical expertise and guidance on the policy language and the claims protocols.

Their understanding of policy language enables them to properly present a claim to insurers and produce a quicker and more satisfactory outcome for our clients.

### MARSH RISK CONSULTING'S FINANCIAL ADVISORY SERVICES PRACTICE (FAS)

FAS offers a variety of services that are of value when considering business interruption losses. This includes both pre-loss assessments and instances where business is interrupted either due to damage onsite or because of external, non-damage-related causes.

Although ports and terminals come in so many shapes and sizes, it can be tempting to adopt a “one-size-fits-all” approach; however, each particular company, region, harbour, operation, and quay has its own characteristics and, while there are commonalities, each asset is unique and can be affected in different ways if an insured event takes place. FAS’ experience of losses triggering business interruption claims include extreme weather causing damage to cranes, machinery breakdown resulting in equipment failure, vessels colliding with quays or blocking harbours, and political disturbance disrupting business.



# 5. SPECIALTY SERVICES

## BUSINESS INTERRUPTION

Loss or damage at a port can reduce the port's ability to operate at full capacity and may even result in closure while the damage is repaired. Beyond incidents that directly impact the port itself, remote events can also interrupt normal productivity. Examples can include both damage and non-damage business interruption events, such as:

- Disruption of key sea, rail, or road routes that link the port to the outside world, preventing access. This could follow, for example, a shipwreck in a critical channel, or river closure due to extended low (or high) water levels, or a landslide that closes the access road to an important customer's mine, quarry, or manufacturing facility.
- Damage at a key partner's port resulting in denial of access to that port.
- Loss of or damage to a customer's vessel or cargo.
- Political activity, civil disturbance, or strikes disrupting the flow of commodities to the port.
- A utilities failure, either at the port itself or at a customer's premises.
- Internal or external hacking into IT systems.

## WHY BUSINESS INTERRUPTION INSURANCE IS SO IMPORTANT

To the extent a loss is caused by an insured event, a properly thought out and effective business interruption insurance programme will protect revenue from the impact of reduced throughput at a port, and will indemnify the increased costs that might be incurred. Costs incurred in preparing a claim, including forensic accounting costs to calculate claim values, would also be covered.

## THE MARSH APPROACH

Marsh has established the Business Interruption Centre of Excellence (BICoE) as a global cross-class project to ensure that our clients feel more comfortable with all their business interruption risks. The BICoE core group is supported by regional leaders who collaborate to improve knowledge of business interruption exposures and to develop new products. The BICoE facilitates discussion and engages specialists from across the firm to ensure that our ports and terminals team has access to business interruption specialists from relevant placement units (including the Cyber and Environmental practices), as well as others, including MRC and FAS. This ensures that a wide range of risk exposure is matched with options to extend cover beyond the scope of traditional policies.

## BUSINESS INTERRUPTION ASSESSMENT

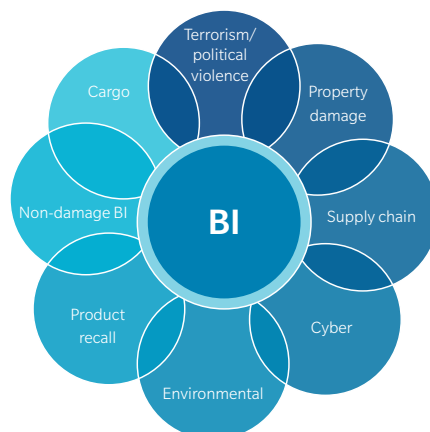
Setting up an effective property damage business interruption insurance programme is an essential foundation and requires an in-depth risk assessment of both the operational and financial dimensions of the business. The outcome of the assessment determines the breadth and basis of cover, the business interruption sum insured, indemnity periods, and essential cover extensions. Other components that need to be considered include supply chain dependencies, redundant capacity, changing customer demands, and market trends.

We will comment on common policy choices that would impact claims preparation following business interruption, including:

- Waiting period.
- If proximate and remote causes are insured.
- The policy treatment of related parties, such as joint venture partners and associated companies.
- Extensions, including contingent business interruption, additional increased cost of working, average clauses, limits, and deductible bases.

We can also advise on complex issues that could potentially result in business interruption at ports and terminals, including:

- What impact an incident could have on ongoing customer relations, such as contract renewals under negotiation and decisions to leave a port after an incident?
- What provisions exist in the royalty or rental arrangements with port and terminal operators and land owners in relation to an insured event taking place?
- Whether users are obliged to pay storage charges in the event of a disruption at a port, which could reduce stevedoring revenue losses?
- If contractual penalty clauses are included in cover or uninsured?
- Whether variable costs have been correctly calculated in declared values for savings as a result of an incident?



## POLITICAL RISK

Industry sectors of all types are susceptible to shock waves following a change of government or as a result of political violence events (whether they cause physical damage or not).

Ports and terminals are attractive sources of foreign exchange for host governments and could be targeted if the revenue-sharing arrangements with the host government are not seen to be equitable, especially as ports and terminals (by definition) represent the gateway to economic wealth for the host country, for example, on mining or other infrastructure projects.

As growth in trade flows on the back of such projects, and general consumer growth translates into greater revenues for the country (and the port), so the assets themselves become vulnerable to political upheaval.

Clients also incur costs when obtaining the required operating licences in the host country, so these “concession-type” licensing costs may need to be protected. This is particularly the case where there has been a change of government, as the new government may want to review licensing agreements and make unilateral retroactive changes for their own benefit.

### WHY POLITICAL RISK INSURANCE IS SO IMPORTANT

Political risk insurance can protect against catastrophic losses caused by unpredictable political events – protection against catastrophic (black swan) events is often why clients choose to purchase political risk insurance (with the coverage usually taken out on a confidential basis, i.e. without the host country being aware of the existence of such insurance).

### THE MARSH APPROACH

Our political risk specialists (more than 40 specialists across a global practice) are drawn from broking, banking, and political risk underwriting, and include professionals with decades of experience in this class of risk, including experience at both private insurers and government agencies in the export credit and investment arena. We are, therefore, familiar with the commercial needs of the private market and the requirements of multilateral entities, such as the Multilateral Investment Guarantee Agency (MIGA).

This expertise enables us to tailor and structure policies to address specific project risks within a host country, and our extensive network of relationships helps us find sufficient cover for all project sizes, even when adverse press may be focused on the countries in which our clients operate, or where they are planning to start projects.

As well as placing political risk cover for a broad range of companies throughout the world, we also place cover for lenders against:

- Expropriation.
- Forced abandonment.
- Political violence damage to assets (resulting from politically motivated violence, including war, civil war, civil strife, riots and strikes, and terrorism or sabotage).
- Currency inconvertibility/non-transfer.
- Forced divestiture.
- Business interruption.
- Licence cancellation.
- Contract frustration/contract repudiation.
- Arbitration award default.



## CYBER RISK

For ports and terminals, an increasing dependency upon technology and automation brings considerable economic benefits. However, this dependency also introduces vulnerability. Any loss of availability, integrity, or confidentiality related to critical systems or data, has the potential to cause significant business impact, with consequent financial loss. As the sophistication of targeted hacking attacks increases, so must efforts to contain and respond to the threat.

### WHY CYBER RISK INSURANCE IS SO IMPORTANT

Cyber risk insurance can provide cover for a range of different events and losses that an organisation could potentially suffer. It is designed in a modular format to allow organisations to pick the cover that is relevant to their activity and profile. The key coverage sections include: protection from certain liability claims connected to the use of an organisation's information technology (IT) to attack others; protection for liability claims arising from the unauthorised release of personal data or third-party confidential information; crisis management costs to investigate and contain the breach and notify affected individuals; replacement of damaged or corrupted data; business interruption caused by network down time; extortion demands following a security breach; protection for certain liability claims, such as infringement of intellectual property or defamation connected with an organisation's online content in websites and social media.

Cyber insurance can become an important component of a port or terminal's risk mitigation and response strategy, delivering not only financial protection, but expert resources at the point of event discovery, including IT forensic experts, legal advisory services, and public relations consultancy.

### THE MARSH APPROACH

Marsh's Cyber Risk Practice is dedicated to providing insurance and risk management solutions for the cyber exposures of clients around the world. The practice operates out of over 20 countries globally and has more than 40 risk professionals dedicated to serving the industry.

At Marsh we have a proven track record of helping clients of all kinds operate in an increasingly technologically dependent environment, particularly at a time when many businesses' critical processes are automated and delivered to the point of use by a mixture of internal and external resources.

Our team works closely with our clients to meet the complex risk management challenges that the diversity of dependent systems and use of critical third-party IT suppliers for delivery creates. We provide clients with the support they require when directing preventative mitigation resources and taking informed risk-transfer decisions.

By combining the expertise of our risk consultants and insurance placement teams, we are able to deliver a seamless service for clients in this important area of risk. According to specific requirements, we can deliver:

- **Cyber risk financing optimisation:** Marsh Risk Consulting (MRC) has developed a specific service to identify, develop, and quantify cyber risk scenarios that can be built into a cyber risk profile unique to a particular organisation. Having established the profile, MRC will utilise our proprietary best-in-class Marsh Analytics Platform to advise on your risk-financing options.
- **Coverage gap analysis:** A detailed review of your current insurance programme can help identify relevant coverage within existing policies of insurance and available cover that may be obtained from the cyber insurance market. We will advise on the most appropriate insurance solution, including recommending improvements that can be made to existing policies or the purchase of additional insurance.
- **Cyber-placement benchmarking:** By utilising our extensive cyber insurance placement data, we can provide a benchmarking report to illustrate the purchasing dynamics of peer companies by revenue segment and industry. The data will contain relevant information on levels of premium, retention, and indemnity limits.
- **Enhanced cyber insurance policy wordings:** We adopt a truly multi-insurer strategy to help obtain the optimum coverage for clients and extract maximum benefit from the rapid pace of innovation and development from within this market. We work closely with leading cyber insurers on crafting and enhancing coverage way beyond their off-the-shelf cyber policies.



## ENVIRONMENTAL RISK

Environmental risks are inherent in the construction and operation of ports and terminals. Because of where they are located, special consideration needs to be given to the potential harm that could be caused by significant pollution of coastal or estuarine environs as a result of their construction or operation. Strict environmental legislation in many countries has resulted in defined requirements for port and terminal operators to assess the potential for environmental impacts, and to manage their business activities accordingly. Heightened public awareness of environmental issues has also led to the enhanced potential for third-party claims for pollution and environmental damage.

Environmental risks can arise at all stages of the port and terminal life cycle:

- Construction – Dredging, removal, and disposal of contaminated material, transportation and storage of significant overburden.
- Operation – Pollution and environmental damage caused by contaminants released during the handling, movement, and storage of products and goods, and associated health and safety risks.
- Closure and restoration – Extensive ground works mean that risks include the treatment and disposal of contaminated sediments.

While many environmental risks are generic, others are specific to the particular facility. The significance of site-specific risks will depend on the environmental characteristics and sensitivity of the surrounding area, often categorised in terms of the surrounding land and coastal habitats.

### WHY ENVIRONMENTAL RISK INSURANCE IS SO IMPORTANT

Environmental risk insurance can protect port and terminal owners, operators, contractors, and investors against a wide range of environmental risks, many of which have the potential to cause significant financial loss.

### THE MARSH APPROACH

As well as placing cover for generic environmental risks, we can tailor and structure policies to address specific projects. Our extensive network of relationships helps us find sufficient cover for all sizes of projects.

We can help our clients secure coverage for:

- Site-specific pollution legal liability – Risks and liabilities arising from any “gradual” or “sudden and accidental” pollution and environmental damaging event.
- Contractors pollution liability, covering first- and third-party liabilities arising from “gradual” and “sudden and accidental” pollution, or environmental damage caused by contractors’ operations.
- Changes in legislation or enforcement procedures that require increased stringency of remediation measures.
- Compliance with financial assurance regulatory requirements.

At Marsh, we acknowledge the need to find the right risk management solution to suit your key environmental risk exposures. We offer access to a team of environmental specialists who advise clients on environmental risk assessment and risk management options. We can assist you in defining the key environmental risks within a port or terminal development project through to providing insurance advice, including providing options for integrating specialist environmental cover within existing insurance programmes.

Our experienced team consists of individuals with environmental, engineering, and insurance backgrounds, who are able to provide strategic advice and consultancy, including:

- Assessment and management of potential environmental risks and liabilities associated with construction projects and operational businesses.
- Demonstrating the effective use of environmental insurance in managing the key environmental risks and liabilities in a port and terminal business.

We provide services that will allow you to complete a comprehensive assessment of the environmental risks inherent in the port or terminal project, while allowing you to derive options for the effective management of key environmental risks in operations, and at times of mergers and acquisitions.



## STARS

STARS is a company that provides tools that help an organisation manage its own risk profile. STARS' solutions are designed to help companies control their total risk costs by monitoring insurance policy erosion and those losses that are retained.

### UNDERSTAND YOUR RISK PROFILE

#### CONSOLIDATE RISK DATA

STARS industry-leading data collection, conversion, and consolidation services are designed to improve the quality and timeliness of risk data. Our data services team works with our clients to collect and integrate risk data sources to develop a consolidated repository of claims, transactions, policies, exposures, and other data required to manage risks effectively. To provide a comprehensive view of risk and claims information, STARS processes data from most major carriers and administrators, and can also integrate data from internal systems, such as human resources or payroll.

#### RISK MANAGEMENT

STARS' reporting tools are designed to help risk managers and safety departments accurately identify trends and recognise areas in need of corrective action. The ability to drill down into exposure data supports an in-depth analysis of losses.

#### CLAIMS MANAGEMENT

STARS provides a comprehensive solution for managing port industry claims. These solutions seamlessly integrate key claim management processes to automate and streamline the claims life cycle. Customisable claims intake, medical bill management, document and payment management, and reporting are combined into a single system. Integrated business rules trigger claims interventions and automate routine claims practices.

#### SITE MANAGEMENT

STARS' location manager allows you to track each location in a hierarchy designed around your organisation's structure. Locations will be identified as corporate entities, physical onshore sites, or otherwise as required. Clients can track various exposure types, such as property or financial exposures for each location to produce robust loss ratio reports.

### REDUCE OPERATIONAL COSTS

#### POLICY MANAGEMENT

STARS' solutions are designed to deliver the flexibility needed for managing various types of insurance programmes, no matter how complex. Claim financials are integrated with individual policies, as well as policy programmes, increasing control over financials and giving clients the ability to accurately monitor critical metrics, such as policy erosion.

#### COMPLIANCE ASSESSMENTS

To help port owners and operators identify potential facility or port-safety issues, STARS provides assessment tools designed for gauging adherence to government regulations, industry standards, and internal best practices. Our audit solutions facilitate the collection and sharing of compliance data across an organisation, enabling management to objectively track, measure, and compare results and progress by facility, geography, or any other criteria.

#### INCIDENT, ACCIDENT AND NEAR-MISS NOTIFICATIONS

Incident, near miss, and accident forms can be completed at ship terminals, ports, or on vessels at the time of occurrence, using web-enabled functionality. By utilising STARS' incident and claims management solutions, clients can report notifications in a comprehensive and easy-to-use format, thereby enabling compliance with industry standard certifications and audits.

# 6. MARSH & McLENNAN COMPANIES

Marsh & McLennan Companies' Global Infrastructure Services group has industry-leading knowledge and experience in the ports and terminals sector. Our group assists clients through the provision of the following differentiated infrastructure services:

- Risk advisory and insurance transactional services.
- Commercial/market, operations, and capital planning organisation.
- Economics and regulation.
- Human capital.
- Investment analysis.

Working with our clients throughout a transaction, our services can include:



## OLIVER WYMAN

Oliver Wyman provides a full range of management and economic consulting services to the international port and maritime terminal industry. Oliver Wyman's port specialists possess management expertise combined with practical transportation and port knowledge. This dual focus provides the industry with the comprehensive capabilities it needs to successfully address the challenges it faces. Oliver Wyman's port-related clients include national and local governing agencies, port authorities, stevedores and terminal operators, shipping lines, railroads, trucking companies, and labour organisations.

Oliver Wyman has been involved in the expansion, modernisation, and restructuring / privatisation of projects for ports and terminals in North and South America and in Europe. It also has extensive experience in market, customer, and competitive analysis for the maritime industry, often as an input to strategic and capital investment planning, and maintains financial and operating models used in planning and evaluating port capital investment projects. These models can be used to analyse investments, evaluate the effect of introducing alternative equipment technologies on financial performance, or develop pricing strategies.

Oliver Wyman has particular expertise in evaluating the financial and economic feasibility of proposed maritime development projects, such as container terminals and intermodal yards. Studies typically involve an assessment of market demand, identification of key customer groups or companies, definition of key success criteria (for example, cost and service orientation), conceptualisation of a physical development plan, and a financial analysis.

## NERA ECONOMIC CONSULTING

NERA Economic Consulting is a leader in providing robust, independent, and implementable economic advice to the maritime industry. It is an expert in economic regulation, and advice on industry restructuring, institutional structures and the design and implementation of regulatory reform. NERA Economic Consulting has designed regulatory frameworks in advance of major privatisations and it advises regulated firms, regulators, and other stakeholders on a wide range of issues arising during price cap reviews.

## MERCER

Many sectors have challenges with managing a unionised workforce, but in ports and terminals the historical employee relationship has been closely aligned with government programmes, where the different components and costs of the employment contract are often understated and long-term commitments are improperly valued. This, combined with an often informal workforce, provides companies with particular human capital challenges.

Mercer is a leading global provider of consulting, outsourcing, and investment services that support the human resource functions. Our human resource consultants have an in-depth understanding of human resource best practices at complex institutions, including within the maritime sector, and have led major transformational efforts.







For further information, please contact your local Marsh office or visit our website at [marsh.com](http://marsh.com)

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**Global Infrastructure  
Insurance House  
of The Year**



**Lloyd's List Awards**   
**Global | 2013**  
**Winner**  
**Business Innovation Award**

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