



TT Club Loss Prevention

2024 – Grain in focus



Changing climatic risk

Protecting your grain from **wet damage**

Risks of shipping bulk grain in **containers**

Persistent and pervasive pests – an update

Asset management – a **case for drones**

Grain handling facilities –
managing third-party personnel



Foreword

As an insurance provider, we understand the importance of managing risks, especially when it comes to the transportation and storage of grain. This 'Grain in focus' document looks to highlight some of the key risks and steps to mitigation.

Grain is more than just a commodity; it's a vital resource that feeds nations. However, its journey from farm to market is filled with potential hazards. Moisture, temperature changes, pests, and other factors can all pose significant threats to its quality. Without proper care, stored grain can suffer from mould, infestation, or decay, leading to significant losses. It's our role to help Members understand these risks and provide guidance on how to mitigate them.

By implementing robust risk management practices, we can ensure the stability and continuity of the grain supply chain. Through diligence, innovation, and collaboration, we can overcome the challenges and secure the prosperity of the grain industry for years to come.

Contents

- [04](#) Five minutes with Rhys Richards: Grain
- [06](#) Persistent and pervasive pests – an update
- [08](#) Risks of shipping bulk grain in containers
- [10](#) Asset management – a case for drones
- [12](#) Grain handling facilities – managing third-party personnel
- [14](#) Protecting your grain from wet damage
- [16](#) Changing climatic risk
- [18](#) TT Club: your local partner in risk management

Disclaimer

The information contained in this publication has been compiled from various sources. TT Club, its Managers and all other contributors do not accept responsibility for loss or damage which may arise from reliance on the information contained herein.

Copyright © Through Transport Mutual Services (UK) Ltd 2024. All rights reserved. Users of this briefing may reproduce or transmit it verbatim only. Any other use, including derivative guidance based on this briefing, in any form or by any means is subject to prior permission in writing from Through Transport Mutual Services (UK) Ltd.

Five minutes with Rhys Richards: Grain

Rhys Richards
Senior Underwriter,
Australasia



Can you please provide an overview of the grain initiative you have been working on in Australia?

The grain industry in Australia presented an opportunity for the Club to provide conventional liability insurance to transport, storage, and handling operators, as well as first party cover for property, business interruption and cargo.

Across the western and eastern 'grain belts', Australia produces around 40 million tonnes of grain per annum, with approximately 70% exported overseas. While only a handful of large operators used to service the Australian grain industry, there has been a recent shift towards small and medium sized storage and transport companies establishing their own market share in rural, inland 'on farm' locations. These factors opened up a significant market opportunity for TT to insure storage facilities, domestic transport operators, and exporters.

It was identified that many operators handled both customer grain (a potential liability exposure) and owned a portion of the grain themselves (therefore requiring a first party, cargo/stock cover). In response to the above factors, we went about establishing a product that offered both.

Through market research, engagement with the industry, and input from supportive brokers and expert consultants, we familiarised ourselves with the risks involved in insuring both the liabilities

of those operators in the grain space, and insuring grain as a commodity.

The existing TT Club cargo handling facilities (CHF) and transport and logistics grain (TLG) covers could suitably be applied to these service providers. The TT Club cargo cover was then adapted to account for the first party exposures from grain in storage and transit (domestic and export).

A combined offering gives the Club a competitive edge in the Australian market.

Why grain?

Grain was initially identified for as a target due to the potential market share. As an AUD 13bn industry it presented as a great opportunity in the bulk and containerised cargo space.

Our enthusiasm to develop the product continued as we familiarised ourselves with the risks involved.

Grain is a fairly hardy commodity; the theft risk is relatively low given the values and bulk nature; the smouldering risk can be managed through technology; and, there is often salvage opportunity in the event of loss/damage. For example, wet damaged grain can be dried and/or comingled with higher quality grain to achieve a product grade that is suitable for stockfeed and maintains some monetary value.

Furthermore, the aggregated exposures at many sites is managed through multiple and segregated storage units. The industry is also well-regulated through documented accepted standards which operators must abide by.

How big is the potential market?

As mentioned, an AUD 13bn industry that produces around 40 million tonnes of grain is big business in Australia.

With over 250 Members of Grain Trade Australia, even if only a third are suitable for TT Club to insure (others may include traders, law firms, or businesses unsuitable for TT Club for another reason) a reasonable prospect pool still remains.

The Club's Member count is currently around 50 in this space and we feel that there is a greater market share to be had.

Why Australia? Could this be applied globally?

There are a few nuances that mean insuring grain and associated liability risks in Australia suited TT Club;

- Growing conditions: growing conditions across west and east coasts mean there is generally a decent yield (and therefore requirement for insurance!) each year, despite potential environmental or climatic impacts.
- Operator size: The aggregated value of commodity per site or conveyance is usually manageable for small- to medium-sized operators.
- Industry engagement: The operational guidelines and regulation within the industry manages the risks well. We have had good engagement with the association 'Grain Trade Australia'.

Despite these unique conditions within Australia, this product could potentially be applied overseas if other TT Club offices deemed the market conditions and risk exposures involved were suitable. There are obviously other large grain growing regions around the globe including North America, South America, and Europe.

So what activities are our Members actually undertaking in this context?

In respect of liability cover, current TT Club members under this grain initiative are storage and handling operators, and transport operators.

The services of storage and handling facilities include grain receipt, testing, fumigating, storing in bunkers, sheds and silos, monitoring and further testing before either loading trucks/trains/ships with grain in bulk, or packing containers for onward transport. The transport operators insured by TT in this space are mainly road hauliers.

Operations are not limited to marine terminals, but also inland facilities which accumulate grain from local rural growing regions, before arranging transport to the coastal export terminals.

The Club's existing CHF and TLG Wordings suit the activities undertaken and exposure faced by these companies.

Those requiring grain cargo cover include growers, exporters, as well as those storage/handling operators that take an insurable interest and require first party cargo cover.

In terms of risk, what would you see as the top three risks for this type of operation?

From a cargo perspective we would consider wet damage from floods or storms to be one of the main risk exposure, both in terms of frequency and size of potential claim. While there are often salvage and down-grade options for the product, these can be dependent on the severity of the initial event and continued weather conditions.

Explosion and/or smouldering within storage units has caught headlines in the past, and while this is still an exposure liability in Australia, it is generally well-mitigated through moisture testing prior to storage, ventilation and heat sensors within storage units, regular monitoring, maintenance of equipment such as conveyor belts or augers, and dust suppression systems.

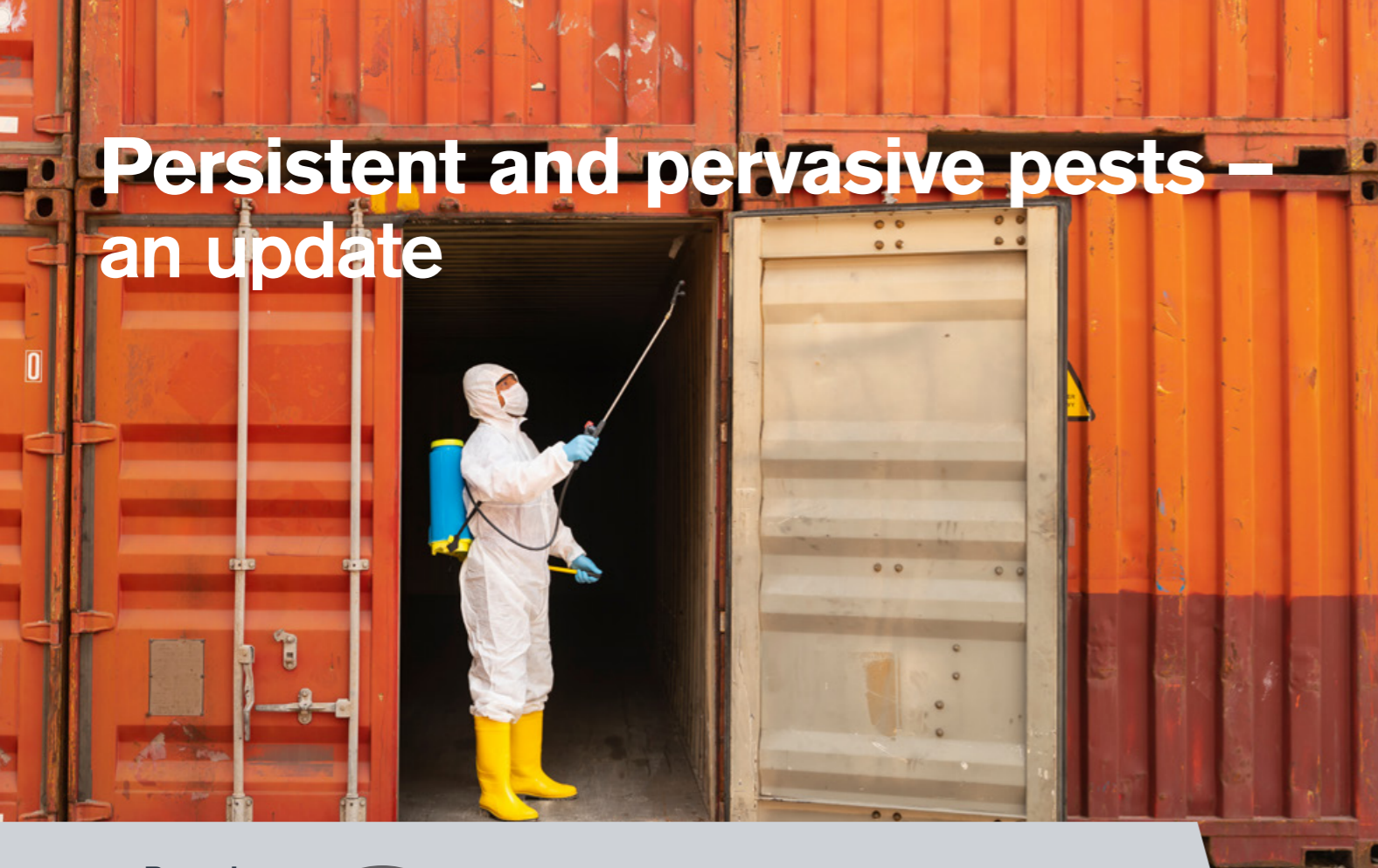
Bodily injury is a notable risk exposure on the liability side. Although there are generally low numbers of people on site and automation is growing, the exposures seen at other bulk cargo handling facilities remain.

Factors that need considering include the dangers of handling of tarps used to cover bunkers and protect grain from the elements, which can be heightened in high winds, as well as the nature of bodily injury claims in Australia, as they can be quite large with costly legal fees.



“Operations are not limited to marine terminals, but also inland facilities.”

Persistent and pervasive pests – an update



Peregrine Storrs-Fox
Risk Management Director, London



Peregrine is TT Club Risk Management Director, and has worked at TT for nearly 40 years. He currently leads TT's participation in the Cargo Integrity Group encouraging all supply chain stakeholders to commit to the highest safety standards in packing, handling and communicating information about unitised cargo worldwide.

Here, Peregrine provides an update on a crucial part of Cargo Integrity: pests.



Everyone involved in the packing and movement of CTUs has a duty... to ensure that the CTU is free of plants, plant products, insects or other animals.



TT continues to highlight the risks relating to the movement of invasive pests through the sea container pathway, recognising concerns raised over many years by the International Plant Protection Convention (IPPC), an agency acting within the Food and Agriculture Organization of the United Nations (FAO). It's a topic relevant to all in the global supply chain, but especially pertinent to those producing and transporting grain, to whom pests pose the greatest risk.

Governmental activity

Much background work has continued during the last twelve months, although the most obvious activity has been the IPPC's second Workshop on 'Pest Risk Mitigation of Sea Containers and their Cargoes and the Facilitation of Trade – defining a way forward', held in Brisbane in July 2023. This workshop followed up on the outcomes from the earlier one held in London in September 2022, reporting specifically on the work of a Sea Containers Focus Group (SCFG) and seeking input into the revised Commission on Phytosanitary Measures (CPM) Recommendation 6 (Sea Containers R-06)². As TT attendee, John Thomson from the Sydney office, stated, "Importantly, in the context of shaping effective risk mitigation measures, attendees at this workshop represented industry and government in roughly even proportions".

The workshop was followed by a consultation process on the draft CPM Recommendation (that closed at the end of September), which

may be publicly available in March 2024, ahead of the next session, the 18th, of CPM (CPM-18) in April. This meeting will also receive a report on further work undertaken by the SCFG.

Industry activity

Earlier in 2023, the World Shipping Council (WSC) and other industry partners had updated the 'Prevention of Pest Contamination of Containers: Joint Industry Guidelines for Cleaning of Containers'³, particularly picking up on the concept of 'Chains of Responsibility' set out in Chapter 4 of the CTU code. The essence is that everyone involved in the packing and movement of CTUs has a duty, delineated by their specific roles and responsibilities in the supply chain, to ensure that the CTU is free of plants, plant products, insects or other animals.

In advancing this concept in relation to the potential for invasive pests to 'hitchhike', this document introduced the term 'custodial responsibility', identifying specifically the responsibility of each container custodian in the supply chain to ensure the unit is clean and free from visible pests at any point of interchange and that the next custodian should ensure that this is done.

This new approach to managing the growing concern about the transfer of invasive pests on and inside freight containers, including their cargoes, was jointly presented at the workshop by WSC and the Global Shippers Forum (GSF), providing a powerful industry coalition that will be important for the follow-through of any voluntary solutions. Assigning responsibility for keeping a container and its contents 'pest-free' to each party that handles it during a transport clearly includes the shipper and the carrier, but will also extend to those involved during inland movement (road and rail operators) and the terminal operator at the port where the container is loaded and unloaded.

This industry-led program was discussed by national government experts and industry representatives, leading to further collaborative work across the industry in order to clarify how the different stakeholders (or 'custodians') can satisfy the responsibilities and strengthen the mitigation outcomes. It may be expected that another revision of the Joint Industry Guidelines, benefiting from broader industry engagement, will be issued in early 2024 in advance of CPM-18.

Further consideration

Data concerning the precise degree of risk continue to be collected, but the workshop heard about certain pilot projects, of note being findings from one curated by the Australian and New Zealand National Plant Protection Organisations (NPPPO). A number of the issues raised should spark further consideration – for example, the most common insect pests found on containers were all in the top 100 of the World's Worst Invasive Species list in the Global Invasive Species Database⁴. Logically, this should pressure concerned agencies, both nationally and internationally, to ensure that quality information is available to support visual identification of contaminants for both export and import operations, together with simple, clear instructions on actions to be taken. Further, strengthened coordination between governments globally would assist in understanding geographical and seasonal pathways that present most concern.

The same presentation noted, in relation to the containers surveyed, that the risk of contamination on external container surfaces was greater than that of cargo within the units. And the most common contaminant detected was soil caught on the undercarriage of the container. Apart from the longer-term potential to refine the undercarriage design (amongst other container design and construction attributes), it is also note-worthy that revisions were published in July for the Unified Container Inspection and Repair Criteria (UCIRC)⁵, for use by depots, specifically taking account of pest contamination risks.

Where next?

Much of this typifies the labyrinth presented in the intermodal supply chain, displaying the diversity of actors involved and the challenges presented by multimodal and multi-national movement of laden and empty units. Regardless of any regulatory outcome, there is much need for awareness-raising materials, specific advice and guidance, and enhanced tools to support both good practice and compliance.

John Thomson commented, "While during 2022 TT produced its set of invasive pest animations to highlight certain key risks through the supply chain, substantial progress was on display from Wisetech Global at the Brisbane workshop demonstrating the 'art of the possible', embedding key container packing decision points within a mobile app". One of the most exciting aspects of this development was setting the pest concern in a broader context of container packing and 'cargo integrity', including adopting the concepts in the Cargo Integrity Group's 'Container Packing Checklist'. Furthermore, there are an increasing number of technology, AI-enabled, devices being trialled that could assist in improving safe, secure and sustainable performance in this specific area and more generally.

The broader context is significant, since issues relating to plant pests necessarily sit alongside other matters affecting biodiversity⁶ and food security, as much as general safety, general security and illicit trades (drugs, illegal wildlife trafficking and counterfeiting, to name a few). Gaining alignment across such a range of interest areas – and governmental agencies – remains hugely difficult and generally illusive.

- 1 International workshop on pest risk mitigation of sea containers and their cargoes and the facilitation of international trade – defining the way forward – International Plant Protection Convention (ippc.int) [<https://www.ippc.int/en/core-activities/capacity-development/sea-containers/international-workshop-on-pest-risk-mitigation-of-sea-containers-and-their-cargoes-and-the-facilitation-of-international-trade-defining-the-way-forward/>]
- 2 https://assets.ippc.int/static/media/files/publication/en/2023/01/12_CPM_2023_01_SeaContainers_Draft_CPM_recommendation_2023-01-12.pdf
- 3 https://static1.squarespace.com/static/5ff6c5336c885a268148bdcc/t/641c85c80b171970243dc24a/1679590858303/Cleaning+of+Containers_Joint+Industry+Guidelines_+EN.pdf
- 4 GISD (iucngisd.org) [https://www.iucngisd.org/gisd/100_worst.php]
- 5 UCIRC_Revision_3.pdf (ics-shipping.org)
- 6 See, for example, <https://www.cbd.int/>



Strengthened coordination between governments globally would assist in understanding geographical and seasonal pathways that present most concern.



Risks of shipping bulk grain in containers

Improper packing of bulk grain cargo can lead to the distortion of the container, compromising structural integrity, spillage of contents, contamination, and injury to workers when opening container doors.

Containers are an increasingly popular, cost effective method for the transport of bulk commodities such as grain. While there are efficiencies in transporting grain in containers, standard general purpose ISO containers are not designed to carry bulk cargoes, meaning additional procedures are required to do so safely.

What are the key risks?

- Distorted (bulged) containers can lose their structural compressive strength. When stacked on board ships or at container terminals there is an increased risk of stack collapse in extreme cases. Distorted containers can cause damage to a container ship's cell guides and adjacent units, resulting in delays to cargo operations.
- Where false bulkheads and labelling have not been utilised, personnel opening and discharging the container may be crushed as the bulk cargo bursts out of the container upon opening the doors.
- Containers may be overweight or overloaded, given the dense properties of grain; capacity is restricted by mass rather than volume. The container, when fully packed with the cargo being transported, should not exceed the rated maximum gross mass of the unit (to ensure that it is not overloaded) as well as any intermodal weight restrictions applicable through the entire journey (when the unit would be overweight).

- Eccentric load distribution, most commonly caused through inappropriate filling operations but also potentially during rough intermodal movements or handling, can result in vehicle overturns or derailments.
- Grain cargoes spilt on board ships potentially result in significant problems for the ship's bilge system. The associated clean up can be complex and costly.
- Pest contamination. Given the nature of the cargo, there is inherent risk of introducing unwelcome pests into the supply chain and ultimately to the destination country. Some pests, such as the Khapra Beetle, can remain hidden in voids within the container for several years. Similarly, spillage during terminal handling operations or land transport is likely to attract birds and vermin, giving rise to health or injury risks.
- Contamination of the grain consignment from unclean container units, tainted by previous cargo residues and noxious materials.

Mitigating the risks

Much relies on the expertise of the shipper and packer to ensure that the container is adequately checked, prepared and filled/packed in line with industry guidelines to ensure the integrity of the cargo, the unit itself and general safety through the supply chain. Under the IMO/ILO/UNECE Code of Practice for Packing of Cargo

Transport Units (CTU Code), it is the responsibility of the shipper and packer to ensure that the container is suitable for the movement of grain and that the cargo is packed to withstand the rigours of transport.

Working together with its Cargo Integrity Group partners, TT has published 'CTU Code – a quick guide' to help the broad industry engage more successfully with the CTU Code and assist wider understanding of good packing practices. A key addition to the guide is a Container Packing Checklist providing packers and their supervisors a clear process to ensure safe, secure and pest free movement of goods.

For a more visual look at the consequences of ignoring the code, watch the Club's 'Use the Code – contain the risk' animations. The Club has also developed a Container Packing Game as a simple, fun way to highlight the importance of packing skills.

While the CTU Code provides guidance for packing containers, for more detailed advice pertaining specifically to the packing of bulk grain cargoes, Shipping Australia Limited developed an Industry Standard for Packing of Grain in Containers and Grain Trade Australia has published Guidelines for Development of a Container Packer Operations Manual.

While not exhaustive, the below practical tips on packing bulk cargo in containers, aligned with the CTU Code and the other guidelines above, will help mitigate the associated risks.

Prior to packing

- Shippers should specify a dry bulk container, which then must meet or exceed standards similar to the ISO 1496 Part 4 specifications or equivalent that include additional end wall strength.
- Check the container to ensure it is free from signs of damage visible pest contamination or previous cargo residues. Pay attention to the condition of the container doors, floors, side

panels and load capacity ratings. Where possible inspect the base structure. Any defects or concerns with the container should be discussed with the container operator. See, for example, Shipping Australia and Grain Trade Australia's recently published joint Standards for Empty Shipping Container Inspection (Version 2).

- Securely attach a full bulkhead at the door end of the container to restrain the cargo and prevent pressure against the container doors. The bulkhead material should be timber or steel bars supporting compliant unbroken plywood or composite board.
- Consider installation of a plastic liner that encloses the cargo on at least five sides including the door end.

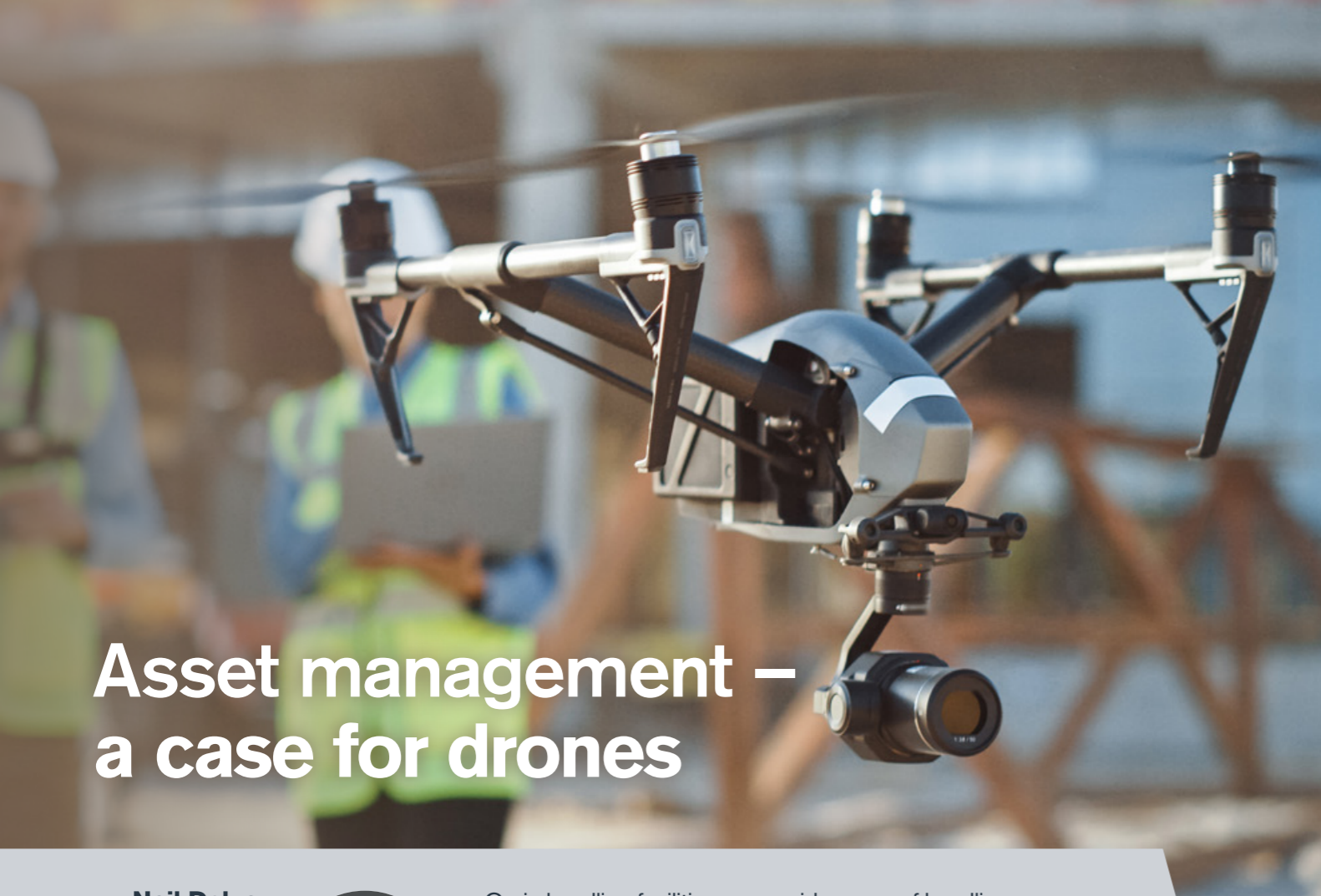
During packing/filling

1. Ensure the process results in even load distribution of the cargo.
2. If the cargo does not utilise the full volume of the container, it is important to ensure that the height of the cargo is kept constant throughout the container, minimising pressure on the side walls and reducing eccentricity.
3. Ensure that the packing process does not give rise to an opportunity for pests to enter the container.

After packing/filling

- Each packed container must be weighed and certified prior to dispatching into intermodal transportation.
- At the end of the packing process, check the unit, including base structure, flooring and all supporting components, to ensure no distortion or leakage is evident or anticipated while in intermodal transportation.
- Determine that visible parts of both the interior and the exterior of the container, and the cargo, are free from visible infestation by pests.
- Affix an ISO 17712 compliant seal for international transport.





Asset management – a case for drones

Neil Dalus
Risk Assessment
Manager,
Newcastle



Grain handling facilities use a wide range of handling equipment assets to serve the global supply chain in the movement and storage of bulk grain. There is also the requirement to protect the grain from damage or contamination, an onerous task considering the sheer amount of grain required to fulfil global demand.

Conducting regular, thorough inspections of both handling equipment and grain stores is vital. Given the nature of the operations, assets regularly see significant wear and tear over their service-life and grain stores are often under attack from both weather and pests. Therefore, to ensure safe and efficient operations, managers must be able to make informed decisions based on the condition of their assets in real time.

With regards to handling equipment, an asset manager needs to build knowledge of asset performance, and plan maintenance interventions appropriately, which makes the quality of the data gathered vital. Similarly, should the quality of the grain be compromised, fast action is imperative. However, given the typical location of these assets, together with their sheer size – access can present danger.

The use of drones within asset management strategies offers significant benefit in terms of safety by reducing the requirement to place personnel in high-risk locations. Likewise, there are tangible benefits in terms of the quality of the data that can be gathered through the utilisation of this technology.

A well-managed drone operation, adhering to sound industry practice and relevant regulatory controls, can prove beneficial. However, the implementation of in-house or third-party drone capabilities within a grain terminal environment needs to be done carefully to avoid introducing new risks.

Background on drones

Drones, also known as UAVs (uncrewed aerial vehicles), are being developed at a rapid pace for deployment in a wide array of industries across the globe. There is rapid adoption for anything from asset inspection to support for emergency services. It is this growth and development which is unlocking potential for the use of drones within the grain handling industry.

Drones, with the correct equipment, training and management, can not only reduce risk in your facility – for example avoiding the need to work at height, in grain silos or alongside equipment – but also may improve operational efficiency due to the ease of deployment and the minimal disruption to operations.

However, there are several regulatory requirements that must be fulfilled to get your own drone operation 'off the ground'. Fortunately, as an expanding market, there are many local providers with experience in delivering appropriate training in their respective regions to assist in getting drone operations up and running.

Asset Management Use-cases

As already mentioned, the use of drones can remove the need to place people in these high-risk areas. Nevertheless, care is required to ensure the data collected are of sufficient quality for the asset managers to make decisions over the service life of the asset. Here is a summary of the tools typically able to be deployed by drones.

Inspection & Survey

Inspection is pivotal in asset management, preserving and optimising resources. Drones can be employed to monitor asset condition proactively, enhancing safety and reliability. Inspections provide data for informed decision-making, resource allocation, maintenance scheduling, and upgrades. Since assets represent significant investments, inspection is essential for sustainable and cost-effective asset management.

Photogrammetry

Photogrammetry uses the images taken by the drone camera, the global positioning system (GPS) data and using specialist software to produce accurate 3D images and analytics.

The process involves flying a drone over the area or asset to be surveyed, capturing images at set intervals. The number of photographs required is large, due to the extent of the photograph overlap required (typically 80%). This provides the processing software the data necessary to determine the position of the individual pixels, enabling the 3D data to be produced.

Where this technology really comes into its own is the ability to survey large or awkward assets (or cargoes) accurately, such as large grain stocks covered in tarpaulin. Further, the data are enriched compared to the traditional approach, since the 3D model can be interrogated using propriety software to extract dimensional or volume data. By running a series of such surveys, it is possible to compare the information over time to identify degradation of the assets or changes in volume.

LIDAR

LIDAR (light detection and ranging), produces a similar data output to photogrammetry, but uses quite different methods to capture the data. Where photogrammetry involves taking images and processing to determine the three-dimensional location of the individual pixels, the LIDAR uses laser technology and the measurement of rebounding light points.

LIDAR does lend itself to coverage of larger areas, and is more of a surveying tool which has the ability to collect enhanced data in heavily wooded areas. Consequently, this technology may have limited application in the typical facility environments.



Thermal imaging

The use of thermal imaging provides an ability to detect possible issues that are not visible to the naked eye. This may give some data enrichment over the use of the regular cameras.

Already used in other industries, this technology can provide insight into possible electrical overheating faults, allowing engineers to investigate and rectify before the issue escalates into an asset fire.

Conclusion

The use of drones is expanding quickly, with many industries realising multiple benefits of deployment. There are three key benefits to using drones in grain handling facilities:

- 1. Safety** – Eliminate the risk to life by removing the need for staff to enter grain bins or work at height
- 2. Cost** – drone inspections are much cheaper to conduct
- 3. Less downtime** – a drone inspection takes much less time, and can eliminate downtime completely in some instances

The implementation of the technology can at first sight appear daunting, but with a defined use-case and the support of appropriate drone industry specialists, the deployment of drones within the port and terminal environment can follow a logical roadmap.

The use of drones is expanding across all industries, with a significant amount of research and development underway. Therefore, we are likely to see ever-increasing use-cases and technological advances over the coming years.

Drones can eliminate placing the workforce in dangerous environments, while gathering enhanced data at regular intervals. This technology simply cannot be ignored within the grain handling industry.

“
Drones can eliminate placing the workforce in dangerous environments, while gathering enhanced data at regular intervals.
”



Grain handling facilities - managing third-party personnel

Mike Yarwood
Managing Director Loss Prevention, London



There will be a range of people entering your facility on a sporadic or temporary basis. Managing the safety of all third-party personnel who might not be familiar with your facility should be a high priority and can present additional challenges.

Operators recognise the value of investing in the safety of their personnel while they are working on the terminal. Strategies will commonly include toolbox talks, shift changeover meetings and observational tours, all assisting in generating awareness of risk amongst employees and providing a safe working environment. Such strategies facilitate learning from incidents or near misses and a platform for all employees to voice concerns or challenge behaviours.

Transparency is a key element where safety is concerned. Developing a blame-free culture and fostering an operational ethos to encourage reporting and learning from mistakes, incidents and near misses can be a productive approach. All such steps support a familiar safe environment where each person knows their responsibilities and the expectations of them.

Visitors and contractors

Where does this leave third parties? Regardless of whether they routinely enter the facility or only sporadically, effective management of these individuals is a critical component of terminal safety. These individuals will not be familiar with your operation – the moving components, the busy periods, the high-risk areas. The common safety strategies used for your own personnel will not apply.

Further, the way that third-party personnel behave while visiting your facility might also differ to that of your personnel. The level of care and diligence will be unpredictable, with some being content to cut a few corners.

“
Transparency is a key element where safety is concerned.
”

Site induction

A thorough site induction is a prime opportunity to educate visitors and contractors – and positively influence their behaviour whilst visiting your facility. Recognising that an overly burdensome approach might be operationally problematic, introducing a balanced approach in which the individual can see value can be prudent. Conversely, a site induction that involves a 30-second video and the issuance of a site pass will communicate little of importance and value for the individual; the induction may be viewed as mere formality for access, rather than critical safety and security messaging.

Nevertheless, videos are a great way of cramming a good level of detail about your facility into a short space of time, including emergency procedures and setting clear behavioural expectations. Other items could include speed limit, PPE requirements, permit to work, highlighting high-risk areas, smoking expectations, use of mobile phone, and an outline of the company drug and alcohol policy.

Operators should consider embedding a qualification questionnaire following such a video to ensure that the detail has been absorbed and that the individual's understanding is positively confirmed.

Induction considerations

If implementing a site access pass system to record and monitor entry, consider broader opportunities. It may be appropriate to maintain restricted areas within the facility, for which enhanced access control can be implemented. Further, passes can easily be time-bound, providing opportunity not just to revoke where necessary but also ensure that safety or security updates can be communicated effectively. Clearly, it may be possible to deploy more enhanced biometrics to improve controls further.

In Australia, entities are required by law to report unsafe incidents, accidents and injuries, known as “notifiable incidents”, to their work health safety regulator. There may be value in displaying the number of worked hours since the last reportable incident, often referred to as a lost time incident. Such a practice may build engagement overall and demonstrate the focus on safety at the facility to third parties. While there are counterarguments, a long period since the last reportable incident may induce more responsible behaviours.

A further consideration may well be the implementation of ‘access agreements’. The specifics may vary dependent on the nature of the individual's role, but apart from referencing the induction and agreement to abide by those contents may incorporate general terms and conditions.

Deployment of technology

While it should not be employed in lieu of other strategies, technology may assist in managing safety at your facility. Operators are exploring the benefits of video analytics as a means of adding valuable rigour to existing processes; use of CCTV cameras to monitor behaviours and movements within the facility can be complemented by sophisticated analytics software to identify undesirable behaviours, near misses and trends.

Such data can be invaluable when reviewing safety processes and procedures. Signage alerting to monitoring will influence behaviours, particularly where control actions are taken. Similarly the data can be used to good effect in tool box talks, future iterations of induction messaging and to challenge offenders to modify their behaviour while on site.

Leading by example

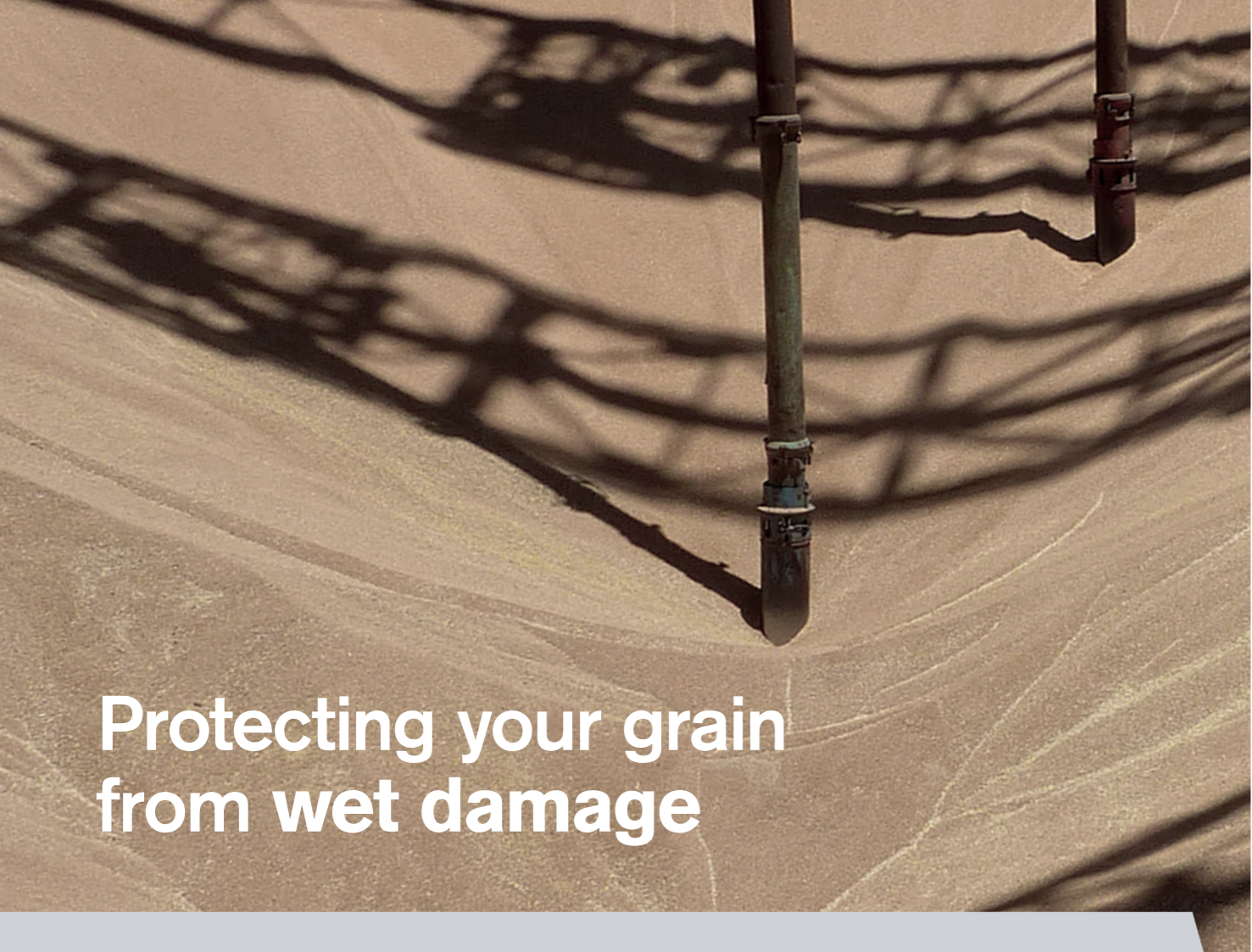
Your own personnel demonstrating a mature safety culture will be powerful. Any third party will necessarily engage with some of your own personnel, whether it be a security guard, a member of the engineering team or a handling equipment operator.

Direct engagement with managers may be less likely, so any of your own personnel will convey the essential ‘DNA’, acting as your ambassadors for the investment made in safety and security. How they behave and act will influence the third party – for example, a visiting engineer being escorted by vehicle on site to the location of a piece of handling equipment will observe if signage or markings are diligently followed and likely behave in a similar way.

It follows that acting decisively when any deficiency is observed is vital. Conversely, routinely overlooking failures fosters confusion, often leading to escalating risks because safety boundaries are uncertain.

Implementing robust systems such as site inductions, behavioural observation tours and technology will promote safety and security on site. Intervention, where required, should be swift and consistent, including banning an individual from entering the site in future for more serious or continued offences.





Protecting your grain from wet damage

Claims relating to wet damage to cargo are all too frequent, especially with grain and other bulk consumables. Many of these can be avoided entirely with a robust pre-loading condition checking procedure. While humidity and condensation are inevitable challenges through the supply chain, pre-existing CTU damages should be an easy check.

“
As TT regularly articulates, around 65% of cargo damage incidents are attributable in part to the way that goods are packed within the cargo transport unit.
”

As TT regularly articulates, around 65% of cargo damage incidents are attributable in part to the way that goods are packed within the cargo transport unit (CTU). The CTU Code and the more recent ‘CTU Code – a quick guide’ and complementary container packing checklist published by the Cargo Integrity Group, provide invaluable guidance for actors in the supply chain to mitigate such risks.

Pre-packing unit condition checks are a critical step in protecting the grain during its journey. Checks for signs of pests, dust, debris, transferable stains and odours are vitally important. So too are checks for physical damage, holes, evidence of repairs and items such as rust or water trails that might indicate water ingress.

What’s the main cause?

TT claims data for 2020 suggest that 25% of wet cargo damage were caused by water ingress to the CTU through pre-existing damage that probably should have been identified as part of the cargo packing process.

Once cargo has entered the intermodal supply chain, TT claims data suggest that a further 17% of wet damage claims stem from impact damage to the unit during transit. Of course throughout the intermodal transit there are a number of touch points at road, rail and maritime terminals, where damage might occur. It is evident that road traffic accidents may also give rise to cargo being exposed to the elements.

Where does the exposure occur?

By mode, the TT data indicates that the greatest risk is posed by the maritime mode which accounted for 65% of reported claims. This in part is explained by the length of time that the cargo is in transit – extending the period of exposure – in addition to the different climatic zones through which the cargo is moved. Road transit was the next most prominent mode at 14%, where shorter journeys, fewer intermodal changes and operator owned units likely influence the better experience.

Wet damage arising under air carriage contracts accounted for only 7% of reported claims in TT data for 2020, reflecting shorter transit periods and different handling parameters. Data suggest that the primary exposure, unsurprisingly, rests in the period between the airside warehouse and physical loading to or unloading from the aircraft.

Perhaps surprisingly, incidents where cargo was wet damaged while in storage accounted for 13% of reported claims. Causation varied, but included damage occurring to or within the storage facility itself and, with increasing frequency, incidence of flooding. Burst piping or malfunction of a sprinkler system accounted for 42% of storage related wet damage claims. However, 31% of these incidents followed sudden heavy rainfall that overcame drain provisions. This latter point highlights the importance of routine maintenance to ensure that drains and drainpipes are clear and undamaged, as well as indicating the prudence of carrying out periodic risk assessments to ensure that original building design parameters remain appropriate.

Considering operational practices

Poor operational practices also attributed to losses, with incidents of cargo temporarily stored entirely unprotected, cargo being transported on flat bed trailers/flat rack containers with insufficient coverings, and cargo being cross-stuffed during periods of rainfall.

In too many instances, cargo had been unstuffed from units for the purposes of customs inspection and laid out on the ground of the facility. Rainfall occurring whilst the goods stood unprotected awaiting inspection inevitably results in damage.

The incident data also illustrate that the traditionally wetter months are when cargo is at greater risk; recent extreme flooding across Australia corroborate this as an emerging (or emerged) risk exposure. Logisticians and facility operators need to consider this proactively.

Prudent actions

While this analysis was limited to 2020 incidents, it was triggered by a deteriorating trend, potentially acting as an indicator to a potential increasing risk exposure. Fortuitous circumstances in many instances resulted in a disproportionate monetary consequence.

While the outcomes are necessarily cargo specific, it is noteworthy that numerous consignments were eventually accepted by the beneficial cargo owner (BCO) with an element of rework, reducing the potential cost of the loss. While such solutions are pragmatic for all concerned, it is clear that all actors in the supply chain need to be mindful of the risks.

Further, while there may be contractual defences to wet damage claims, such as where the bill of lading is noted ‘shipper load, stow and count’, there are inevitable consequences when damage is incurred in this way. Having entrusted their cargo into your care, custody and control, the BCO might be expected to be aggrieved when part or all of their valuable cargo has suffered wet damage – regardless of fault; reputational damage can be extremely difficult to repair.

An additional factor that is often overlooked is the management time consumed in handling any dispute, claim and strained customer

“
By mode, the TT data indicates that the greatest risk is posed by the maritime mode which accounted for 65% of reported claims.
”

relationship. These claims are often complex, involving multiple parties and incurring costs in inspections, surveying and defence.

Anecdotally, the selection and sourcing of CTU equipment may be fraught, but anyone taking contractual responsibility has a clear interest in ensuring that freight arrives undamaged. Undertaking due diligence when appointing local agents and subcontractors, and building service level agreements (SLA’s) into contracts will clarify your expectations, resulting in greater certainty of outcome, including mitigating the risk of wet damage to cargo.



Changing climatic risk



Everyone is well aware of weather conditions in their locality; those with responsibility for operating cargo facilities are likely to be acutely conscious of changes in local climatic conditions. Many will have seen tidal surges, wind microbursts and unprecedented rainfall become more common.

Operators of warehouses, terminals and port areas need to keep 'fresh' their assessment of the changing risk profile in relation to climate experience in order to protect personnel, operations, equipment, fixed property and infrastructure, and importantly customers' goods.

Meteorological understanding is doubtless advancing and the related technologies to assist managing risk are equally widely available. The capability to monitor, record and predict weather patterns will continue to develop. However, none of this will physically protect your operation, but, when utilised as an integral component of your ongoing risk assessment, may inform decision-making, such as where to position equipment, how best to stack empty containers and what would strengthen procurement specifications.

Whilst many storm events are considered geographically seasonal - such as those in the Tropics - the entire supply chain industry globally must take adequate steps to prepare for isolated severe weather events. Typically wind strength is most ferocious in coastal areas. However, it is often the surge and flood risk that can cause greater problems, both on the coastline and further inland.

Further, recent months have seen extraordinary volumes of rainfall over short periods in various parts of the globe, resulting in flash flooding and causing significant damage, including to warehouse

“ Operators of warehouses, terminals and port areas need to keep 'fresh' their assessment of the changing risk profile in relation to climate experience. ”

facilities and cargo stored within them. The fact that more rain fell on a particular day than any other in recorded history does not assure legal defence if a claimant can demonstrate deficiencies in your operational risk assessment or inadequacies in the steps you took in advance of the weather event.

The associated losses of such incidents can be far reaching; water is unforgiving and has the ability to penetrate and cause significant damage. Flood water is inevitably dirty, increasing damage and in many instances creating health challenging situations.

TT claims data over the last three years suggest that inland operations were subject to damage in 32% of cases, illustrating (unsurprisingly) that operations positioned on or near a coast are more susceptible to weather related incidents (68% of cases). 16% of claims notified through the period involved heavy rainfall that overwhelmed drains and guttering causing flooding to buildings and storage facilities. Property damage through strong winds and microbursts featured in 74% of weather related claims through the period.

Whilst not exhaustive the following areas could provide a sound basis for assessing the risk to your business.

- **General operations** – Taking account of the operational activities your business undertakes, consider exposures in relation to storage, in-bound and out-bound distribution, co-packing, self-store, vehicle parking etc. How would your operation be affected in the event of your premises being flooded?
- **Location** – Since storm surge is a significant risk - for yards and warehouses - consider proximity to sea level or a river/other watercourse. If your operation is exposed to potentially high winds, precautions also need to be considered regarding, for example, the stack height of containers.
- **Weather data** – Source reliable local historic weather data and any trend analyses to consider the likelihood of heavy rainfall and flooding.
- **Cargoes** – Operational plans for cargo storage need to take account of specific sensitivities of the cargo or packaging (eg. bagged or non-palletised), as well as general vulnerabilities from site layout (eg. warehouse racking). Evaluate these risks, including considering your emergency plan to move/secure cargo.
- **Aggregation risk** – Consider the total value of the cargo you are storing and what exposure you might have (without regard to trading conditions) if it were all damaged in a single event. Ensure that your insurer is aware.
- **Business continuity** – What measures are required to protect vehicles and mobile handling equipment, any office premises and equipment, as well as maintain communication/IT/OT capability? How quickly would your business return to full operational capacity?
- **Property** – Who is responsible for upkeep and maintenance of buildings and infrastructure? Is preventative maintenance undertaken (and recorded), such as unblocking drains and guttering? Are defect resolution procedures clear (and followed)? Does the drainage capacity remain sufficient in light of emerging weather data and accounting for any site alterations (eg. extended roof area)?
- **Contractual obligations** – In the event of flooding or storm damage, aside from any damaged cargo, would you be able to satisfy your contractual commitments to your customers? Consider both acceptance/processing of further deliveries as well as distribution of existing stock. Are your standard trading conditions properly incorporated in your general business dealings? Assess your potential exposure and the limits of liability under both standard terms and any special contracts. Beware any financial penalties for non-performance which will not be covered by insurance.



“ The fact that more rain fell on a particular day than any other in recorded history does not assure legal defence if a claimant can demonstrate deficiencies in your operational risk assessment. ”

- **Insurance & financial resilience** – It is imperative that your insurer has a sound understanding of your operational activities, your property, what cargo you are storing, what equipment is on site at any given time and a reasonable valuation of it all. Note, however, that studies have shown that there is likely to be a significant difference between an 'insured loss' and the full 'economic loss', the latter including various indirect costs, such as lost management time and reputational damage.

Extreme weather events can be challenging to predict - and even effective forecasting may only provide a matter of hours for the respective operators to react. It is important to ensure that adequate risk assessments are undertaken across the full breadth of your operation in order to understand thoroughly the various risks and, where appropriate, develop mitigating actions and controls, together with effective continuity plans to protect your business.



TT Club: your local partner in risk management

TT Club is the established market-leading independent provider of mutual insurance and related risk management services to the international transport and logistics industry. The Club's services include specialist underwriting, claims management and risk and loss management advice, supported by a global office network. TT Club's mission is to make the industry safer, more secure and more sustainable. Established in 1968, TT Club currently services more than 1400 Members – container owners, operators, ports, terminals and logistics companies. Its membership covers the entire logistics journey, working across maritime, road, rail, and air ranging from some of the world's largest logistics operators to smaller, bespoke companies managing similar risks. The Club is renowned for its high-quality service, in-depth industry knowledge and enduring Member loyalty. Its average annual customer retention rate is consistently over 95%, with some Members having chosen to insure with the Club for over 50 years.

