

# TT Talk - Containers in a storm

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Logistics and transport mutual insurer TT Club has noted that, since land-based storm events frequently were most severe at the shoreline, it was unsurprising that containers often become caught up in the ensuing damage. Storm events arrived in various guises and would display characteristics particular to the season or location. Typically there would be two immediate risks:



- high winds (including unpredictable gusts and water surface surges)
- precipitation.

The latter might well exceed the established drainage or channelling capabilities. This, combined with storm surges, could lead to severe flooding. Precipitation had in recent months resulted in the tragic flooding around Durban, South Africa. Higher levels of rain were recorded in many parts of the world than normally experienced. The ferocity and impact of storm events around the globe, arising at any time of the year, in some instances defying forecasters, was predictably increasing awareness overall of the risks.

## Container yard storage

The common perception might be that an empty container – weighing two to three tonnes – cannot easily be dislodged. TT Club observed that the reality was rather different. The sides of the units provided an ideal ‘sail area’ for high wind impact; storage would generally have no interconnectors between tiers vertically, and the options to tie down or secure stacks are often seen as challenging for depot or terminal yard operations. Even simple solutions such as offered by Windbreaker International, entrant to the 2019 TT Club Innovation in Safety Award, take considerable time to achieve widespread adoption.

Different methods of stacking empty (and laden) units can mitigate the risk of collapse or dislodging. There could be additional operational measures taken when a storm is forecast, but, generally speaking, lower and wider stacks would reduce vulnerability and minimize the need for emergency re-stacking as a storm approached. Similarly, aligning the longitudinal axes of the containers with the predominant wind direction was sound practice; it may be that this is less considered for depot planning, while port infrastructure developments should actively take into account such risks, the Club said.

Techniques such as 'pyramiding' can also reduce the risks and provide some protection for adjacent assets. In some instances it might be possible to stack heavy laden units on top of empties, which might have the added benefit of protecting cargo from flood water. When containers become dislodged or an entire stack was toppled, it might be anticipated that the units themselves would suffer varying degrees of damage. Each container would need to be thoroughly inspected to ensure that appropriate repairs were undertaken prior to return to service. The units might be damaged from both their own movement and from other wind-borne debris. Taking remedial action after the storm might require careful planning to ensure the safety of personnel, as well as avoiding further damage to the units and cargo – and the handling equipment deployed.

### Reefer considerations

Temperature controlled containers necessarily have the additional vulnerability of the reefer machinery, both to physical damage and operational integrity. Plans might be established in advance (or in the emergency) to secure alternative power supply and restore or maintain continuity of power to operating units. However, this could be further complicated where floodwater impacted the reefer stacks, both in relation to power supplies and also penetration of water into the units' insulation. Where the machinery of temperature controlled units has been affected by flood water, steps would be required to dry the electrical systems and protect machinery parts from developing corrosion.

### Recovering operations

Severe storm events would certainly lead to more widespread damage beyond the terminal or depot boundaries. The recent experience in Durban resulted in substantial damage to infrastructure – road and rail damage, including bridges, as well as power and communications outage – together with tragic loss of life. As a consequence, local authorities would have varying priorities that might impact the ability of any particular business to recover. That aside, access to flooded or damaged facilities to tidy up the mess left after the storm, receive and dispatch cargo or containers, and generally restore operations safely might be complex. The Club concluded by saying that ports and terminals should be familiar with the requirement to establish and test emergency plans. This applied equally to all depot operations. Importantly, emergency plans needed to be compiled in liaison with local authorities and emergency agencies, but also take account of risks presented by or to neighbouring facilities, and, at least potentially, customer or supplier commitments, TT Club said.

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