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## **The Perils of Packing**

*Specialist freight insurer, TT Club is on a mission to heighten awareness of the dangerous consequences of improperly packed containers. In his article Peregrine Storrs-Fox, TT's Risk Management Director examines the issue in detail.*

Effective cargo management is critical whatever supply chain role is being undertaken. Thus, there is edge to the current debate in the container industry concerning incidents that damage both cargo and containers, as well as causing injuries and fatalities. The issues involve questions about what cargo is in the container, how much of it there is and how it is packed. The debate has reached the most influential maritime forum, the IMO.

Much industry attention recently has been focussed on the necessity to have an accurate weight for the cargo packed in every sea-going container. Initially, debate surrounded the degree to which inaccurate weights cause accidents – stack collapse, road and terminal vehicle overturning, crane failure or even contributing to ship loss. Conclusive evidence is not easy to collate, but sufficient nevertheless to require greater rigour.

However, the reality is that accurate weighing of containerised cargo is but a small part of safety in the supply chain. The way in which cargo is packed in the containers is arguably more dangerous in leading to load shifts and cargo spillages. Accident investigations frequently identify poor weight distribution, improperly packed cargo and inadequate dunnaging, chocking and securing.

A survey on behalf of the industry bodies, ILO/IMO/UNECE\* – which is developing a Code of Practice for Packing Cargo Transport Units – confirmed it is not weight per se, but inappropriately stowed and secured cargo that is the major cause of such accidents. The TT Club believes it is vital that the issue of safe cargo packing now be given as much attention as that of accurate cargo weights.

### **Packing Issues**

TT Club's own claims experience shows that 65% of all incidents involve loss or damage to cargo and of these, our analysis suggests over one-third result from poor packing. This trend is borne out by statistics from the container lines' Cargo Information Notification System (CINS), where some 35% of incidents investigated are found to have been caused by poorly or incorrectly packed containers.

Our experience, and that of our Members, and of a number of consultants that have researched the problem, reveals a variety of 'bad-practices'. Often those involved in packing cargo transport units (CTUs) – trailers, swap bodies and railcars as well as containers – struggle to get a heavy item in and then believe that it will never move in the unit during transit. Even if considering it might move, they believe 'surely that 25 mm square batten nailed to the floor will stop it'. Additionally, many also believe that placing the heavy load near the door will make it easier to get it out again, without thinking of the consequences of such weight distribution in different modes of transport.

Again, we have found large diameter and, therefore, heavy steel coils placed on the floor of a container. Knowing that they need to stop the coils rolling, the packers nailed insubstantial 50 x 50 mm battens in front and behind. Such woefully inadequate blocking and bracing is all too common. Equally, cargoes covering the majority of the floor of CTU are often not secured in the belief that, since there are few gaps, they will not move or not by much. As a result of such practices, we see heavy cargo items breaking through the sides of containers, coils falling through the floors or simply the discovery at destination that the entire cargo has been smashed.

Furthermore, there is inadequate awareness of the dynamic forces imposed on cargo during transit. In order to make the nature of these forces more understandable: a domestic washing machine goes through about 6,000 movements in a typical wash cycle; in comparison a trans-Atlantic voyage on a container ship may put cargo through some 160,000 similar movements.

There is an element of 'out of sight, out of mind' of course. Once those who packed the container at origin close the doors they are generally relinquished of all responsibility. The modern container passes through so many handling processes on its subsequent journey that it can be difficult to pinpoint liability for an incident even if poor packing is suspected. The consequences, however, are vast in terms of injury and loss of life as well as cargo damage and damage to other property.

### **Training is Required**

As a consequence, the TT Club commissioned Exis Technologies to develop CTUpack e-learning™. This is an online training tool for those involved in the loading and unloading of containers and other CTUs. Both organisations hope we can thereby further focus industry attention on the significant and dangerous implications of bad packing and the training required to address the problem.

The CTUpack e-learning™ course is aligned with the current IMO/ILO/UN ECE Guidelines for packing CTUs, as well as being informed by the developing Code of Practice. Beginning with the foundation course, which will be launched in September, it will comprise modules that

include *topics* such as ‘cargo’ or ‘transport’ and *elements* – the equivalent of lessons – covering areas like ‘forces and stresses’. In the future the course will evolve to reflect developments and updates to the Guidelines/Code of Practice, and there is scope for additional modules to incorporate special cargoes and more advanced training elements.

CTUpack e-learning™ follows the well established IMDG Code e-learning training course from Exis, which is also sponsored by TT Club. Both courses are relevant to the risk management approach that the Club has always fostered within the global freight transport community. As in other operational sectors of the industry, training is clearly the number one loss prevention measure and, if adopted as a core feature of an operator’s culture, can greatly reduce the number of incidents incurred globally each year throughout the industry.

### **Regulations and the Code of Practice**

The TT Club is not alone in promoting the use of such ‘best practice’ guidelines for cargo packing procedures. For many years SOLAS (International convention for the Safety of Life at Sea) and the IMDG Code (International Maritime Dangerous Goods Code) have referenced the IMO/ILO/UN ECE ‘Guidelines for Packing Cargo Transport Units (CTUs)’ (1997) to assist those involved in packing containers and other transport units. The same publication is quoted in numerous other documents produced by trade organisations, carriers, NGOs and governmental organisations in an attempt to provide their constituents with packing advice.

However, the ILO research entitled ‘Safety in the supply chain in relation to packing of containers’, published in 2011 found that only 15% of packers use the guidelines. The majority of respondents – scarcely representing the global packer industry – were unaware of the CTU Packing Guidelines. Even where their existence was recognised, they were often perceived as rules applying only to the shipping lines. Subsequently the ILO’s global dialogue forum concluded that the existing guidelines should be updated and revised, and importantly formulated as a non-mandatory – but enforceable – Code of Practice.

It was also agreed that there was a need to improve the collection and publication of data on accidents arising from the improper packing of containers, including consideration of the standard classification of accidents in order to identify related road and other accidents.

And so, in October 2011, a Group of Experts was nominated by the three UN bodies. This comprised representatives from maritime and shore based safety enterprises; trade, academic and risk management organisations; governmental agencies and individuals with packing expertise. The Group started work on revising the existing document and upgrading it to a Code of Practice. Their final draft is to be considered at the next IMO Dangerous Goods, Solid Cargo and Containers sub-committee (DSC) in September this year, followed by review by the other UN bodies concerned.

The Code of Practice for Packing Cargo Transport Units (CTU Packing Code) is a far more comprehensive document than the original guidelines, providing all parties in the supply chain information about their responsibilities, with details of how to pack and secure packages and cargo items taking account of transport forces, load distribution and the CTU's anchor and lashing point strengths. It also places a responsibility on the shipper to declare correctly the composition of the cargo, as well as the gross mass of the packed CTU.

### **Communication is the Key**

So plenty of good work is being done but communication still remains the challenge. The ILO's research clearly found that the current packing guidelines are not generally reaching those who are actually packing CTUs and therefore recommended that its replacement should be readily available in a format that can be used by packers across the globe. It was also agreed that the CTU Packing Code should be promoted as the source of best practice for safety in the supply chain. The substantial investment of time and money to draw together this wealth of expertise to develop the CTU Packing Code will only be worthwhile if effective global dissemination and use of the Code is achieved. The launch of CTUpack e-learning™ represents what the TT Club hopes will be an important contribution to broad dissemination of sound information on best practice.

\*International Labour Organization/International Maritime Organization/United Nations Economic Commission for Europe