

Regulation of container weighing

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Shipping is a global industry and with more than 90 per cent of international trade being carried by sea, it is the most important element in the world's supply chain of goods. Shipping cannot fulfil its role without clearly defined rules of play eg. through internationally agreed regulatory instruments with focus on safety of ships, seafarers and environmental protection. BIMCO works to facilitate harmonisation and standardisation of commercial shipping practices while promoting fair business transactions and free access to markets.

When it comes to weighing of containers, the shipping industry already has an international regulation scheme in place. The present regulation two in chapter VI of the International Convention for the Safety of Life at Sea (SOLAS Convention) requires the shipper of containerised goods to provide the ship's master or his representative with the gross mass of the container, prior to loading on the ship, confirmed in writing and with the appropriate shipping documents. Furthermore, the regulation requires that the shipper shall ensure that the gross mass of the loaded (or 'stuffed') container is in accordance with the gross mass declared on the shipping documents. The SOLAS Convention does not however require that a container loaded with cargo shall be weighed to verify the documents.

Safety issues

So what is the problem? Unfortunately it frequently occurs that the shipper's declared weight is incorrect. Ships, trucks and port facilities using incorrect weights in the handling and stowage of the container have been the cause or a contributing cause to numerous operational and safety incidents and accidents.

For feeder and medium sized container vessels with loading capacity of less than 5,000 twenty-foot equivalent units (TEUs), inaccuracy of container mass could lead to loss of lives and loss of vessels. If a heavy container is declared as light, this container will be stowed in the upper tiers. This is done to ensure that the centre of gravity of the container stack and the overall centre of gravity is kept as low as possible. If the centre of gravity of the ship becomes erratic due to the wrongly declared container masses, this may cause instability or even a negative stability and could cause the vessel to capsize. Furthermore as the ship uses up bunkers from the bottom tanks, the centre of gravity and thereby also the stability will be influenced during its voyage.

In June 2011 the DENEb capsized in Algeciras due to a significant stability problem which caused her to capsize. A review after the incident found that out of the 168 containers on the load list, 16 – or roughly one out of 10 – containers had



The DENEb capsized in Algeciras

actual weights far in excess of the declared weights. The actual weights exceeded the declared weight in a range from between 1.9 times as much as the declared weight to as much as 6.7 times the declared weight. The total actual weight of these 16 containers was more than 278 tonnes above their total declared weight of about 93 tonnes, making it four times higher than their declared weight.

For larger ships with a capacity of more than 5,000 TEUs, the impact of wrongly declared weights is predominantly restricted to stack weight and lashing violations. As container vessels grow in capacity, more containers are stowed on deck and the strength tolerances are reduced while the breadth of the ship normally ensures sufficient stability.

In January 2007 MSC NAPOLI was seriously damaged in a severe storm. The hull cracked and this caused a flood in the engine room. The ship was later beached off the Devon coast in the UK. The accident was found to be the result of structural failure of the vessel hull skin and girders at the interface between the transverse stiffening of the engine room and the longitudinal stiffening of the cargo area. This was due to the loading on the structure, the containers and the rare sea state exceeding the capacity of the hull girders in this area. During the salvage operation, 660 containers stowed on deck, which had remained dry, were weighed. According to the 'Report on the investigation of the structural failure of MSC Napoli', by the UK Marine Accident Investigation Branch, 137 (20 per cent) of these containers were more than three tonnes different to their declared weights. The largest difference was 20 tonnes, and the total weight of the 137 containers was 312 tonnes heavier than on the cargo manifest.

Industry work to amend SOLAS

Incorrectly declared container weights have been a problem for many years and the industry has not managed to solve this through improving standards. In July 2011 The World Shipping Council (WSC), the International Chamber of Shipping (ICS), and BIMCO submitted a paper to the IMO's sub-committee on dangerous goods, solid cargoes and containers (DSC 16) expressing concerns and advocating the need to ensure the safety of the ship, workers both aboard ship and ashore and, the safety of other cargo by requiring that containers' actual weights are verified and provided to the port facility prior to loading aboard a ship.

Verification of a container's actual weight is not technically difficult. It simply requires an authorised or certified weighing scale to provide acceptable documentation showing that the container has been weighed and what that weight is. Container vessels do not have cranes capable of weighing containers and therefore they must depend on the container weighing to be performed on-shore.

We as ship owners prefer the actual weight to be measured before the container is delivered to the port facility by a service provider, or at the port facility or the terminal itself. Many ports already have weighing scales at their 'in-gates' and increasingly, these also have container repositioning and lifting equipment on them. In some locations, like the US, mandatory export container weighing has been implemented for years without undue cost or impairment of efficient port operations.

Some shippers have noted that, although they do not weigh the container after they have stuffed and sealed it, their cargo weight declarations are reasonably accurate because they know the number and the weight of the cargo units that have been loaded into the container and the tare weight of the empty container. They therefore should not be subjected to further regulatory requirements because other shippers' weight declarations are inaccurate.

We realise that most shippers do not have weighing scales at their container stuffing locations, and furthermore, even if scales are available within the country where the shipper is domiciled, they may not be conveniently located between the container stuffing location and the receiving port facility. It would be impractical for the tens of thousands of different shippers of containerised goods around the world to install container weighing devices on their premises.

Industry proposal to amend SOLAS

After DSC 16, WSC, ICS and BIMCO had time to develop a concrete text to amend SOLAS. It was presented at DSC 17 in June 2012. Through consultations with flag states and relevant stakeholder organisations, the final proposal was sponsored by Denmark, the Netherlands, the US, BIMCO, the International Association of Ports and Harbours (IAPH), ICS, the International Transport Workers Federation (ITF) and WSC. The following new SOLAS paragraph was proposed:

'A freight container containing cargo shall not be loaded aboard a ship unless the master or his representative and the terminal representative have the verified gross weight of the container obtained by a weighing of the container. Such verified weights shall be available sufficiently in advance of vessel loading to be used in the vessel stowage plan.'

The rationale for the proposal is that the best way to verify the mass of a stuffed container is to weigh it. Also, the effective port and flag state enforcement is behind such an obligation, while enforcement of SOLAS obligations solely on shippers outside the ship-port interface is difficult at best and non-existent at worst. This would allow the obligation to be met by the shipper obtaining a weight verification, while recognising that many shippers will find this impractical and in such cases impose an obligation on the vessel and the port facility. It would therefore institutionalise a routine practice that all containers' actual verified weight be known by all responsible parties before containers are stowed aboard a ship.

During consultations a number of flag states expressed various reservations about the proposal. Some did not agree that container weight verification requires weighing all loaded containers. Some were not prepared at this time to support creating a port state SOLAS regulatory obligation on marine terminals with respect to container weight verification.

Status of IMO work

The above-mentioned and other concerns were expressed further at the DSC 17 and the debate on the issue was lengthy. At DSC the issue of container weighing was debated in a working group (WG). The WG reported the result of its deliberations to the plenary of the DSC 17.

On the positive side, agreement could be reached that the most accurate way to determine the weight of the container was by weighing. Taking into account however that not every country has the necessary resources to actually perform the weighing, it was also agreed that there was the need for flexibility when drafting new SOLAS requirements.

After considering many issues including the practicalities of implementation of the new requirement, the WG agreed to a set of draft amendments to SOLAS. In brief, the draft amendment meant that in the future, if cargo was carried in a freight container, the gross mass should be verified by the shipper, either by weighing the packed freight container using calibrated and certified equipment or weighing all packages and cargo items, including the mass of pallets, dunnage and other securing material to be packed in the freight container and adding the tare mass

of the freight container to the sum of the single masses, using a certified method approved by the competent authority of the state in which packing of the freight container was completed.

The shipper of a freight container should also ensure that the verified gross mass was stated in the shipping document and if the shipping document did not provide the verified gross mass and the master or his representative and the terminal representative had not obtained the verified gross mass of the loaded freight container, it should not be loaded on to the ship.

Next steps

Sadly, the above-mentioned proposed draft SOLAS amendments were rejected by the plenary of the DSC 17 and the text will now have to be reconsidered in a correspondence group. Due to time constraints, the WG was not able to consider a number of associated draft guidelines regarding verified container weights and the WG agreed to recommend to the sub-committee that the draft guidelines should be further considered by a correspondence group, which will present its work to DSC in September 2013.

The delay means that the earliest we will see an international regulation on container weighing is 2016, depending on whether the DSC 18 can reach consensus on the draft proposed text and the associated guidelines and their subsequent approval by the Maritime Safety Committee.

ABOUT THE AUTHOR



Aron Sorensen is the Chief Marine Technical Officer at BIMCO with responsibility for the association's technical affairs and for monitoring the regulatory developments at IMO and other international organisations. Following a career at sea as a deck officer prior to joining BIMCO he worked at the Danish Maritime Authority. Aron Sorensen also serves on a number of committees such as IACS' Quality System Certification Scheme Advisory Committee, Korean Register European Committee, and attends a number of industry working groups.

ABOUT THE ORGANISATION

BIMCO is a shipping association providing a wide range of services to its global membership of stakeholders who have vested interests in the shipping industry, including ship owners, operators, managers, brokers and agents. The association's main objective is to facilitate the commercial operations of its membership by means of developing standard contracts and clauses, and providing quality information, advice, and education. BIMCO promotes fair business practices, free trade and open access to markets and is a strong advocate for the harmonisation and standardisation of all shipping related activity. Accredited as a non-governmental organisation (NGO) with all relevant United Nations agencies and other regulatory entities, BIMCO actively promotes the application of international agreed regulatory instruments.

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