IVR TECHNICAL LEAFLET

RISKS OF INCORRECT CARGO SECURING

Every year claims as a result of insufficient cargo securing on board of vessels amount to tens of millions of Euros. Not only claims for damaged goods but also for personal injury when people get injured by insufficiently secured loads that may fall over, or lashings that fail suddenly.

The stability of the vessel plays an important role in the securing of cargo, too little stability increases the healing angle leading to too much stress on the securing and lashing and shifting or rolling of cargo.

THE MAIN CAUSES OF ACCIDENTS ARE

LOADING CONTAINERS TOO HIGH.

There is a likelihood that the vessel will suffer a loss of stability.

LOADING FULL CONTAINERS ONTO EMPTY OR LIGHT CONTAINERS

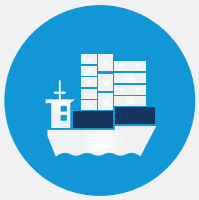
This makes the vessel unstable. When the vessel is pulled to one side or affected by strong wind and seas, the vessel lists because it is unstable, and containers fall off. There is also a likelihood that the vessel will suffer loss of stability.

NOT STOWING OR SECURING CARGO PROPERLY.

If cargo is not stowed properly it can fall over, slide or roll across the vessel which may cause the vessel to list. Then more cargo shifts and there is a bigger list until cargo falls over the side or the vessel capsizes.

VESSEL IS IN POOR CONDITION.

The steel inside the vessel is in poor condition and there are holes between the tanks. Water entering one tank runs into the next tank, the vessel starts to list. Ultimately this may result in cargo going overboard or the vessel to list or even to capsize.



OVERLOADING

Overloaded vessels have been lost due to taking on water after very small collisions. When overloaded all certification and insurance cover is cancelled and the vessel's stability can be seriously affected

THERE ARE SEVERAL CAUSES THAT CAN BE ATTRIBUTED TO IMPROPER OR INSUFFICIENT LASHING OF CARGOES ON BOARD SHIPS:

- Lack of knowledge or failure to follow the relevant rules and recommendations by crew.
- Lack of appreciation of the various forces acting on the vessel and its cargo that may be encountered when sudden unforeseen moves are made.
- Lack of stability causing heavy rolling or heaving.
- Lack of sufficient lashing material on board.
- Insufficient time to complete securing of the cargo before departure.
- Insufficient basic techniques necessary for expert lashing.
- Dunnage not utilized effectively (e.g. insufficient timber, bad quality or damaged by previous cargoes).
- Improper use of the cargo securing gear available (e.g. incorrect SWL, straps around sharp edges, etc.)

Before loading a specific piece of cargo, the dimensions, COG (Centre Of Gravity) and lashing points and weight has to be known to the vessels crew. Based on these details and the place inside the hold, the cargo can be lashed and secured sufficiently.

The following can be seen as general guidelines:

- Designated lashing eyes or brackets on the cargo should be used.
- Lashings must be tight and as short as possible. Lashing with chains instead of steel wires is to be preferred, where appropriate and not risking damaging the cargo, as wires tend to stretch over time, rendering the lashings less efficient
- Access to the lashings during the passage must be foreseen, in order to be able to do regular checks.
- Lashings must be secured properly to suitable lashing eyes on the ship. When welding additional lashing points on the vessel, this should be carried out by a experienced cargo surveyor.
- Lashings should be enough to withstand forces during the journey.
- Where possible multiple lashings on a single unit should be kept under equal tension. The use of different materials on one unit (e.g. steel wires, chains, straps) should be avoided.

The consequences of inadequate, or in the worst case no lashings, can be huge. It may not only lead to material damage and large claims but may also lead to (fatal) injury. In both cases, in addition to the emotional damage, indemnities followed by large fines or even imprisonment may be the result. Therefore, in case of unfamiliarity with certain cargoes or when difficulties are encountered when drawing up a lashing plan for specific cargoes, it is advisable to consult an expert cargo surveyor in advance when in doubt.

POINTERS WHEN CARRYING CONTAINER

LOADING AND SECURING

If more containers are to be carried, stability must be recalculated en het stability manual consulted. The minimum requirements of the stability book must be complied with at all times.

Heavy containers should always be stowed on the bottom tier and never be stowed on top of lighter or empty containers.

Containers should be stowed fore and aft. The bottom tier should be stowed on flat dunnage laid across the vessel so that the corner posts are on the dunnage. Whenever possible the containers should be stowed against the side-boards of the vessel and each container should be stowed closely against the next container. Any empty space left between containers after the stow has been completed must be chocked with heavy pieces of timber and wooden wedges.

POINTERS WHEN CARRYING

LARGE, HEAVY CARGO

- Special care must be taken when loading and securing large, heavy cargo. It is essential to place large dunnage on the deck of the vessel to spread the load.
- Tomming and wire lashings should be used to ensure that, even if the vessel lists, the cargo will not move.
- If the Master is not familiar with securing heavy cargo it is recommended that he requests the assistance of an experienced cargo surveyor to attend.

POINTERS WHEN CARRYING GENERAL CARGO, STEEL COILS, CABLES & PIPES STOWAGE & SECURING

- Cases and general cargo should be secured so that they cannot slide or fall over. They should be chocked or lashed at the bottom to prevent sliding and stowed against other cargo if possible and chocked or lashed to prevent tipping over. Alternatively, they can be lashed against the side boards.
- Steel coils should be stowed 'on the roll', fore & aft, with heavy wooden wedges hammered between the curve of the coil and the deck of the vessel to prevent movement. They should never be stowed more than 1 high. Make sure the wedges are placed on the web frames, to prevent the bottom plate to bent through and thus loosening the wedges.
- Bundles of pipes or wire rods can be stowed across the vessel or fore and aft. Large pipes should be stowed across the vessel, wooden chocks or wedges hammered between the curve of the pipe and the deck of the vessel and cargo or chocking stowed against the end of the pipes.