



**KISH P & I LOSS PREVENTION CIRCULAR KPI-LP-29-2012**  
***(Loss of Anchors & Limitations of the Associated Equipment)***

There has been an increase in number of cases involving lost anchors, and from classification societies we learn that approximately one anchor per 100 ships is lost annually. The reasons for loss of anchors and chain are many, and include lack of seamanship and inadequate maintenance, but also instances of the chain and anchor breaking, leaving a question mark as to the quality of such parts as provided by the manufacturers.

The investigations reveal that letting go the anchor by gravity in deep waters can be a major source of anchor losses. There are different approaches in seamanship techniques that how an anchor should be let gone but a common recommendation may be to walk-back the whole chain & anchor in depths over 30-40 metres.

From the P & I Club point of view an anchor loss can initiate a claim. Most of which are due to the loss of anchors at designated anchorages where the authorities require the lost items to be removed, thus resulting in a “wreck removal” case and related expenses.

The more serious and very costly cases are when a vessel starts dragging her anchor in bad weather, and where this leads to collisions with other vessels, groundings and loss of the ship, or to damage to cables and pipelines on the seabed.

In these situations the matters will be more complex as various claims arise and the cause attributions as well as consequential damages will be inter-related.

► **Considerations for strength and limitations of anchoring equipment:**

The rules for anchoring equipment, the grade, length and size of chain, number and weight of the anchors, the strength of the chain stoppers and the power of the anchor windlasses and the brakes, are established by the classification societies. They can be found in the rules of the individual societies, or in the unified rules of IACS, the International Association of Class Societies.

It is important to be aware that these are minimum requirements, and to know the assumptions made in the calculations.

*For each vessel the class society will calculate an Equipment Number by using a formula, where the displacement of the vessel, the breadth of the ship and the height from the summer load waterline to the top of the uppermost house, as well as the profile view area of the hull, superstructures and houses above the summer load waterline are included.*

Thus, the forces on the ship by current and wind from both the front and the sides are taken into account. The formula is based on an assumption that the speed of the current may reach 2.5 m/sec, and wind speed of 25 m/sec, which represent quite high forces, but it is also assumed that the vessel can use a scope between 6 and 10, the scope being the ratio between length of chain paid out and water depth.

However, large ships at deep anchorages do not have sufficient chain onboard to reach scopes of such magnitude.

If a ship is at anchor in ballast condition, the Master should also bear in mind that wind forces acting on his ship may be much larger than the calculations have accounted for, as larger ship side areas are now exposed, while the measurements entered in the formula was taken from the summer load water line.



Vessels in ballast will also be more vulnerable if they have to move away in bad weather, as both the *steering and the propulsion* may be affected.

Classification societies make it clear that the use of the anchoring equipment is only for the temporary mooring of a vessel, within a harbour or a sheltered area, when awaiting berth, tide, etc. It is particularly emphasized that the equipment is not designed to hold a ship off a fully exposed coast in bad weather or to stop a vessel from drifting.

The anchoring equipment, as designed in accordance with the class rules, will only hold the vessel in good holding ground, while the holding power is significantly reduced in poor holding ground.

► **Loss Prevention recommendations:**

A) If a vessel is anchored in an area exposed to weather, it is necessary to have a policy as to when to leave. There have been cases when Masters have been under commercial pressure not to leave the anchorage, and disasters have happened because the Master was tempted “to wait and see until the morning”, although the weather forecast was bad.

In making his decision whether to stay or to leave, the Master should also be aware of the limitations of his anchoring equipment. Some Masters may not have full knowledge of these limitations; however, they are laid down by the classification societies in their rules for calculating the dimensions, weights and strengths of the anchoring equipment.

With the mentioned limitations in mind, it can be seen from cases of ships dragging anchors in bad weather that Masters have at times placed too much trust in their vessel’s anchoring equipment.

B) Following an appropriate Planned Maintenance Programme will reduce the chances of equipment malfunction and failure.

C) As in many other incidents; a proper & effective risk assessment will be vital, especially if the anchoring is going to be done in open or deep waters. It is important to bear in mind that anchoring can not secure the vessel in boisterous weather & in many situations the vessel may be better off adrift. Today’s weather forecasts are usually very reliable and Masters more often choose to weigh anchors and go out to sea in time if heavy weather is predicted.

KISH P&I CLUB

KPI Loss Prevention Team  
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