

## Loss of anchor of ships Causes and preventive measures



Anchor loss, in addition to being the root cause of many groundings and collisions, is also among the top five reasons for very high cost claims. Losing anchor and chain can often lead to collisions and grounding, potentially causing incalculable damage to the ship. Added to the cost of anchor loss is the fair demand from port authorities to retrieve lost anchors.



A ship's lost anchor is retrieved by another ship's anchor.

Anchors with their chain on the bottom of a safe anchorage ultimately negate its safety, because there is a risk of the lost anchor being pulled up by another ship's anchor, with the risk of that ship colliding with other ships in the anchorage, without mentioning the time and cost of freeing it from another ship's lost anchor.

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A root cause study revealed that the majority of these losses could have been avoided by a better reading of the anchorage's environmental conditions, more attention to some key technical issues and, in general, the application of seamanship.

Investigation of the root cause of anchor loss has shown that, in the majority of cases, environmental conditions (weather, currents) of the anchorage and their dynamics are responsible. Many moorings are outside protected waters where maximum readings exceed maximum safe mooring conditions.

Current speed: maximum 1.5 m/s

Wind speed: maximum 11 m/s

Wave height: maximum 2 m.

In order to achieve the necessary holding force of the anchor, it is necessary that the chain and the swivel remain horizontal on the seabed and that the seabed has the appropriate texture for holding.

The ratio between water depth and chain span is a key factor in mooring safety. Usually 3 keys (cables) in addition to the mooring depth. For example, if the depth of the anchorage is 40 m, then the safe extension is, depending on the weather, from 6 to 10 keys (1 key approx. 27.5 m). In addition, the windlass motor is typically designed to lift the anchor and three lengths of chain (82.5m). According to the study, there were several cases and anchoring areas in which the winch was unable to lift the weight of the anchor and chain, due to anchoring in waters that were too deep (Fujairah, Piraeus).

Some key steps related to anchor loss technical breakdowns that should be followed by the ship's maintenance plan are:

Checking the anchor during docking (laying on the tank) for damage.

Check the D key as often as possible.

Change the brake bandages when wear is observed.

Check the condition of all equipment (couplers, gears, chain pulley hatches, winch motor oil leaks) to hold the anchor securely.

Anchor and chain with their fees bearing certificates.

Anchoring should be carried out in accordance with safety protocols and with the application of nautical art.

If the environmental conditions at the mooring worsen, then increase the chain span and the machine is ready.

Anchor loss also includes operational issues related to safe anchoring, such as:

All officers of the deck must know the maximum values in the ambient conditions that the equipment can withstand.

Proper implementation of regular inspections and maintenance of mooring equipment.

When new ships are built, an assessment should be made of the possible need to increase the maximum anchor holding values of the mooring equipment.