



PREVENTION AT SEA

CIRCULAR 12/2018

“ANCHOR LOSS – TAKE CARE, BEFORE IT HAPPENS!”

Don't Cure,
PREVENT

“Anchor Loss – Take care, before it happens!”

Case#1: During a PaSea Real-Time Navigational audit, the cargo vessel was anchored for a bunkering operation in Singapore. When the operation was completed and the crew members commenced the heaving of the anchor, they realized that the anchor chain was heaved up with the anchor itself missing.



Photo – Vessel 's Anchor

Root cause analysis – Why did this happen?



Loss of anchors are the root causes of many groundings and collisions and the crew and Officers need to be aware of the risks and assess them thoroughly, especially in heavy weather conditions.

Most of the cases of anchor loss could be prevented with proper inspection, maintenance, following operational procedures and awareness on the limitations of the anchoring system, as per the manufacturer's instructions.

Photo – Anchor loss due to “D” shackle link opening up

The cause of this incident was a failure at the “D” shackle bolt, where its tapered pin fell out, as it was not correctly secured. The pin moved from its position due to vessel's vibration, resulting to the anchor's loss.

Five (5) important factors to consider and maintain

1. "D" shackle connections need to be inspected and effectively maintained as frequently as possible. Other cases have been reported involving failure of the Kenter shackles that were not properly assembled for connecting the anchor chain.
2. The swivel pin is considered crucial in order to avoid too much twist of the anchor chain. In some cases, the anchor may be lost due to the detachment of the swivel pin from the chain link. Most of the times corrosion weakens the connection of the chain links, therefore, special attention needs to be paid on visible signs of slunk.
3. The anchor chain "is no stronger than its weakest link". The most typical defect on an anchor chain is damage to the chain connections due to wear and tear. The chain stands may also come loose and fall off due to excessive slunk which significantly weakens the chain. If stands are lost or dislocated, the Class society should be informed immediately and special precautions need to be taken during anchoring in order to reduce the load on the chain, until the chain is replaced or repaired according to approved procedures.
4. The chain stopper and brakes are to be engaged at anchor and during voyages in order to relieve the anchor winch brakes. Chain stoppers not properly engaged may cause loss of anchors.
5. The windlass brake system is considered essential to secure a controlled drop of the anchor chain. Corrosion and mechanical wear of the brake system will reduce the brake's effectiveness. The brake 'needs to be adjusted and maintained according to the manufacturer's instructions. Many anchors are lost due to uncontrolled run-out of the chain.

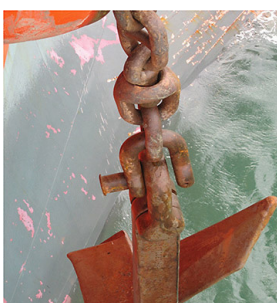


Photo – "D" shackle connection

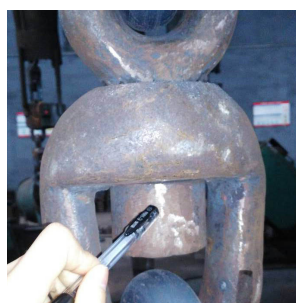


Photo – Swivel Pin



Photo – Swivel Pin

Due to crew involvement in anchoring operations, it is essential to perform frequent risk assessments focusing on personal safety.

Anchor loss is not limited to the poor maintenance of the above mentioned equipment – factors . It is a combination of many factors, that have to be considered during anchoring operations in order to PREVENT a potential incident. Other factors that need to be considered include environmental limitations of the equipment, depth limitations of the anchor winch motor as well as leaving anchorage in time if heavy weather is approaching .

IACS requirements state: "The equipment is therefore not designed to hold a ship off fully exposed coasts in rough weather or to stop a ship which is moving or drifting. In this condition the loads on the anchoring equipment increase to such a degree that its components may be damaged or lost owing to the high energy forces generated, particularly in large ships"

Anchoring equipment - Planned Maintenance System (PMS)

- ✓ A check should be performed for wear down of guillotine bar, hinges and securing pin
- ✓ Ensure that shackle pins are in place
- ✓ If the chain stands are damaged, it is suggested that they are replaced and not repaired by welding
- ✓ It is recommended to renew wire lashings periodically when these are damaged / corroded
- ✓ Associated shackles should be replaced when damaged / corroded

Lessons Learnt

- Anchoring a vessel requires careful planning taking into consideration the prevailing and forecasted weather, the current, the depth of the water, proximity of other vessels, navigational hazards and the capability of the anchoring machinery.
- The planned anchoring maneuver should to be discussed at the pre-arrival briefing and should include the anchoring team.
- The routine maintenance of the windlass arrangement and anchoring equipment according to Company procedures is essential for any deck planned maintenance system.
- The importance of inspection of anchor "D" shackles, shackle pins, joining shackles, flukes and shank.
- The necessity for good training of the crew on the use and maintenance of the anchoring equipment as well as crew familiarity of the Company established Emergency Preparedness Procedures.



Photo – Port Anchor Chain



Photo – Ship chain - Anchor loss

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FOR MORE INFORMATION,
PLEASE DO NOT HESITATE TO CONTACT US.



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