CIRCULAR ANCHORING

APRIL 2025

Every year, accidents occur worldwide during anchoring operations, leading to groundings, pollution incidents, infrastructure damage, injuries, and even fatalities. The primary contributing factors to these accidents include the crew's lack of familiarity with secure anchoring practices, limitations of anchoring equipment, inadequate maintenance, and the absence of best practices in anchoring. With this circular, MSIG Specialty Marine aims to raise awareness about the risks involved in anchoring, and we will outline key safety considerations and effective anchoring procedures while highlighting common dangers to avoid.

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Anchoring is a crucial manoeuvre during a vessel's operations and can be necessary for various reasons, including waiting for berth availability, conducting Ship-to-Ship transfers, seeking shelter from adverse weather, or addressing emergencies. Anchoring is also used to manoeuvre within ports for vessel control.

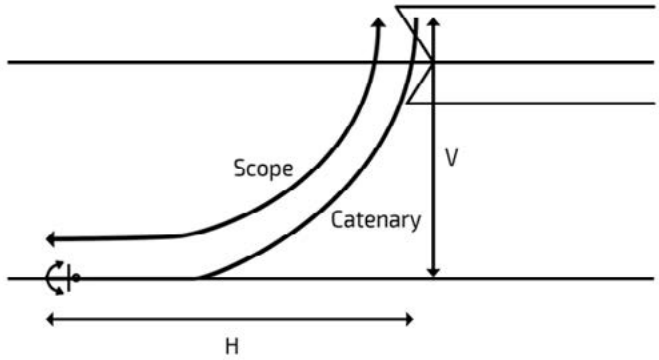
Whether anchoring for any of the above reasons or others, the procedure for preparing, executing, and monitoring the operation must remain the same. Anchoring should always be approached with care and safety in mind - no matter the circumstances. *Safety first!*

Given the potential dangers, proper training and a deep understanding of the anchor equipment is essential before undertaking any related maintenance or anchoring.

To fully grasp the risks of anchoring, one must first understand the principles of anchoring.

The fundamental principle of anchoring involves the anchor embedding into the seabed by using a combination of weight and gravity, which buries the anchor's flukes into the bottom as the vessel moves slowly astern. This backward movement also prevents the anchor chain from piling up.

It's crucial to recognize that the vessel's anchorage relies on the weight of the catenary in the anchor chain and not on the anchor itself, the length of the anchor chain, the brake, stopper, or other equipment.



*The **catenary** is the portion of the anchor chain that curves upward in an arc from the seabed to the point where it exits the water and enters the hawse pipe.

The **scope refers to the full length of the anchor chain, from the hawse pipe to the anchor.

Pre-Anchoring Preparations

Before anchoring, it is essential to review the charts and nautical publications. To ensure the best place to anchor, consider the following:

- **Water Depth**: Too deep a water depth may prevent you from properly lifting the anchor chain, while too shallow could lead to grounding.
- **Seabed Conditions**: Mud and sand provide excellent holding for anchors, while rocky or weedy bottoms may hinder anchor grip.
- **Fouling of the Ground**: Check for underwater cables, wrecks, or even explosives. Picking up cables can cause power outages or worse, while wrecks may trap equipment, resulting in the loss of anchor and chain.
- **Position and Scope**: Maintain a safe distance from other vessels, infrastructure, and environmentally sensitive areas. Calculate the appropriate scope (anchor chain length to water depth ratio) for a secure hold. Also take into account the turning circle of the vessel, which pivots around the anchor. The vessel should also follow the orders of the local authorities regarding the designated anchoring area.
- **Weather Conditions**: If unfavourable weather is forecasted, reconsider whether anchoring is the best option, or if it would be safer to keep steaming.

RISK ASSESSMENT PRIOR TO ANCHORING

As stated, anchoring carries inherent risks, and a comprehensive Risk Assessment should be prepared beforehand.

The Risk Assessment must align with the Safety Management System, identifying all risks and hazards while implementing control measures to mitigate them. These measures could include proper lighting, appropriate personal protective equipment (PPE), an understanding of equipment limitations, emergency procedures, and clear communication between the anchor party and the bridge team.

Once the Risk Assessment is complete, a toolbox meeting should be held before beginning the anchoring operation. This meeting should address all aspects of the procedure, such as how much chain will be used, potential risks, traffic congestion, mitigations in place, and contingency plans for delays or emergencies. It is also advisable to keep the main engine on standby.

Common Risks in Anchoring

- **Anchor Dragging**: If the anchor fails to hold, the vessel may drift, increasing the risk of collisions, running aground, or entering restricted areas. Regular position checks are crucial after anchoring.
- **Equipment Failure**: Poorly maintained or incorrectly used anchoring equipment, such as the windlass, chain, or shackles, can lead to failures, compromising crew and vessel safety and causing significant damage.
- **Environmental Impact**: Anchors can damage sensitive seabeds, such as coral reefs, and disrupt marine habitats. Choosing an appropriate location and minimizing force during the anchoring operation, being either dropping or weighing, can help reduce environmental impact.
- **Damage to the Vessel**: Due to the heaviness of the equipment, the risk of hull damage lies around the corner. Therefore, it is vital to pump out the anchor until it reaches the waterline in order to decrease the speed of dropping the anchor and also to regularly inspect the chain for any abnormal positioning, such as a chain running under the bow. If this happens, putting more chain length in the water could help, or the assistance of the engine may be required.
- **Personal Injuries**: If the anchoring equipment is handled by untrained personnel in an unsafe area, the risk of injuries, or even death increases. Some causes of injuries which have been noted in the past are:
  - Personnel being hit by the anchor chain
  - Injuries due to slippery decks or no clean work space
  - Pinching injuries
  - Electric shocks

Anchor Watch & Emergency Preparedness

Although anchor watch may seem like a simple task, it is vital to regularly monitor the vessel's position, particularly during adverse weather conditions or strong currents. Assign a responsible officer to track the anchor's position.
Crew members should also familiarize themselves with emergency protocols in case the anchor drags. These protocols should include procedures for weighing anchor, manoeuvring the vessel, and alerting nearby traffic.

Reporting and Documentation

Accurate documentation is crucial. Record the time, location, and details of the anchoring and weighing operations in the ship's logbook. Any incidents, such as anchor dragging or equipment failure, should be reported immediately to the designated authority.

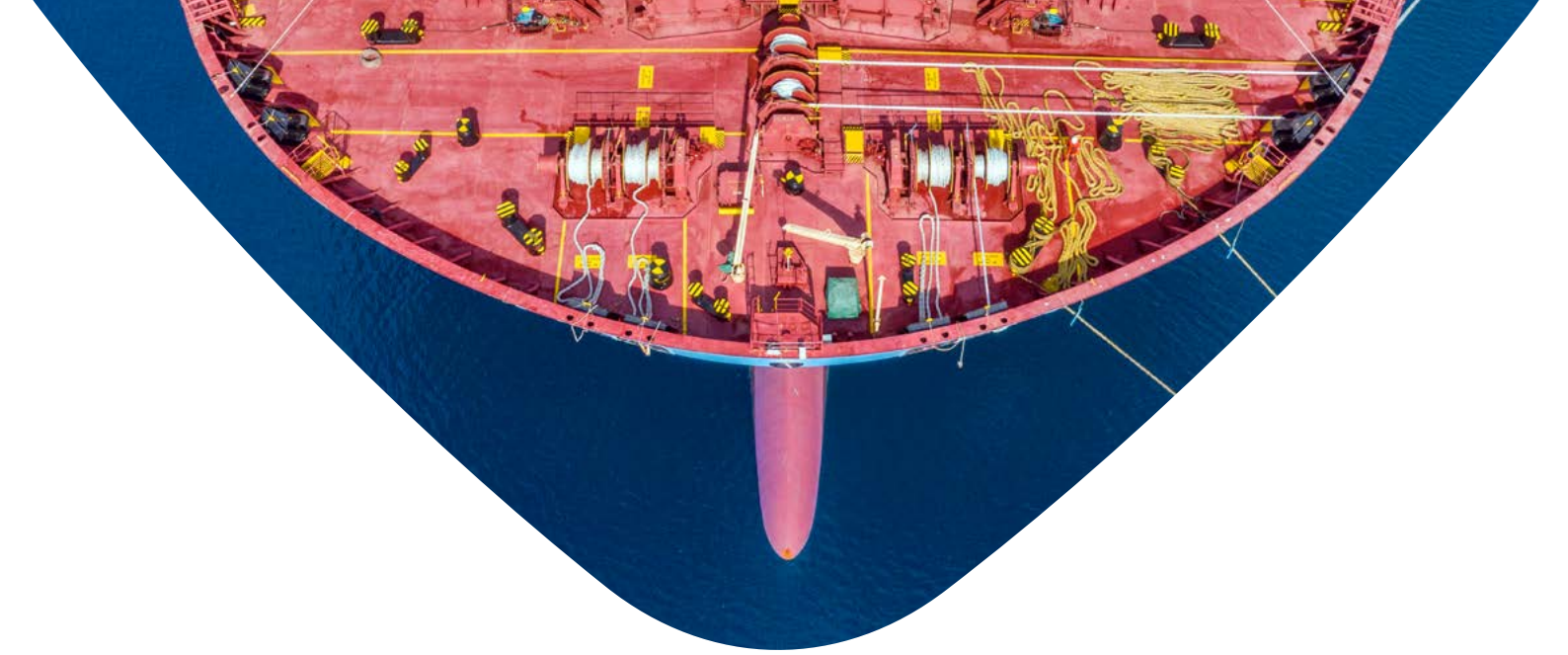
Maintenance of Anchoring Equipment

Proper maintenance of anchoring equipment is essential for its reliability and safety during operations. Follow the ship's planned maintenance program and the manufacturer's guidelines. Maintenance records should be kept to track inspections, repairs, and part replacements.

Some tasks for maintaining anchoring equipment include:

- Visually inspecting the anchor, anchor chain, and windlass for wear, corrosion, cracks, or damage. Look for sharp edges or deformations that could compromise effectiveness.
- Lubricating the moving parts of the anchor and windlass to ensure smooth operation.
- Ensuring the proper stowage of the anchor chain to prevent tangling, kinking, or chafing.
- Checking the motor, drive system, and electrical components for proper functionality.
- Inspecting the brake system to ensure it can control the anchor effectively.
- Checking hoses and hydraulic components for leaks, and ensuring fluid levels and quality are adequate.
- Inspecting the anchor locker for wear, corrosion, and seawater buildup. Ensure proper drainage to prevent water accumulation.
- Verifying emergency procedures for anchor system failure and ensuring backup systems are operational.
- Ensuring that safety equipment, such as gloves and helmets, is used when handling the anchor and chain.

By maintaining anchoring equipment properly, you ensure the safety of the vessel and crew, as well as efficient operations during anchoring and mooring.



Conclusion

Anchoring is a vital skill for crew members, but it carries significant risks if not performed correctly. Proper maintenance, thorough planning, awareness of environmental conditions, and continuous vigilance are essential to ensuring safe and responsible anchoring operations.

Safe sailing.

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