

# **BEST PRACTICE AND MARINE SAFETY CRITERIA BULLETIN 01-2022**

Date of issue: 05.07.2022

## **BPMSCB 01-2022: Mooring Incident, Non-conformities and minimum Safety criteria for Mooring Equipment and Mooring Systems Management**

This bulletin is the first in a series of bulletins that Fremantle Port Authority will be issuing to the Shipping Industry.

**Objective:** The objective of the bulletins is to enhance safety of vessels and safety of port operations. The bulletins will provide vessel owners / managers (ISM-Document of Compliance holders) / vessel masters and crew, the necessary guidance and information to enable completion of safe port calls at the Port of Fremantle. Vessels are required to comply with the marine safety criteria expectations set out in these bulletins.

### **Area of focus for this bulletin - Mooring safety**

Fremantle Ports experienced a high potential mooring incident in 2021.

### **Incident details**

A container vessel in the Inner Harbour drifted off the berth by 20-25 metres while another vessel had passed by and was in the process of mooring at the adjacent berth. The tugs attending to the other vessel assisted in mooring / securing the vessel back alongside the berth.

### **Potential consequence**

The incident occurred during the shift break for shore stevedores and hence had no container gantry cranes in operation at the time. However, in case of an active gantry crane operation, the incident could have resulted in serious consequences for both personnel and port / berth infrastructure.

### **Contributory Factors / Root causes**

Fremantle Ports conducted a detailed investigation of the incident which included boarding of the vessel to inspect the condition of the vessel's mooring equipment.

The following was noted:



- Poorly maintained mooring equipment making the vessel unacceptable to return to Fremantle
- Thinned down mooring winch brake liners incapable of safely mooring the vessel and holding the vessel alongside the berth
- Deformed and wasted winch brake drums, spindle connecting blocks, brake bands etc
- Poor condition of bollards and fairleads
- Lack of a planned monitoring regime from Shore / Ship teams to ensure continued suitability and readiness of the mooring equipment

### **Immediate actions by Fremantle Ports**

- The vessel was deemed UNACCEPTABLE to return to the Port of Fremantle, unless rectification of the existing conditions were carried out and objective evidence provided to and verified by Fremantle Ports prior to return.
- All vessels arriving at Fremantle Ports are required to declare the condition of their mooring equipment including mooring winches, mooring ropes, ship fittings designed for towage via the Enhanced 48 Hour Notice of Arrival process.
- Pro-active initiative to board vessels for mooring condition and vessel standards inspections was initiated. Vessels are currently, randomly selected and inspected by Fremantle Ports Harbour Master's office staff to verify actual condition of mooring equipment.

## Observations noted through vessel inspections and feedback from Fremantle Ports

- A large number of non-tanker vessels were noted to have inadequate planned maintenance and monitoring systems for Mooring ropes and on-board mooring equipment systems.
- No brake rendering tests conducted for extended periods, at times as much as greater than 7-8 years and in a few cases no records of brake rendering tests at all. This includes lack of awareness regarding mooring safety, brake rendering tests and their significance, training for mooring safety etc.
- The Brake rendering test is an important safety feature of the mooring winch drums. A correctly set winch brake provides the safeguard for a mooring rope to render prior to parting at excessive loads thereby preventing potential serious injuries / fatalities to mooring crews onboard the vessel or ashore. The response from a number of vessels and vessel operators is that the winch brake test is mandatory only for tankers. Vessel operators and masters are to note that the absence of a correctly performed winch brake test and settings can result in parting of mooring ropes. Mooring ropes at the time of parting do not differentiate between tanker and non-tanker vessels and can cause serious harm to mooring crews.
- Poor mooring systems maintenance including conditioning monitoring of mooring ropes, bollards, fairleads etc has the potential for serious safety hazards to both, the vessel's crew and shore mooring teams.
- In a few cases, vessel's crew have been instructed by shore management teams to conduct brake rendering tests without training and by using uncertified made-on-board test equipment. This is an unacceptable practice as it has the potential to cause serious injuries to the vessel's crew.

## Requirements for all vessels calling at the Port of Fremantle

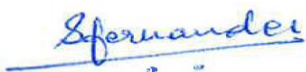
- All vessel owners are required to implement Mooring ropes and Mooring system management plans as part of Planned Maintenance Systems (PMS). The checks must include as a minimum, inspections and maintenance of mooring ropes, winch brakes and liners, paying close attention to condition of brake band and contact surfaces. Clear and unambiguous guidance must be provided to the vessel's crew for conducting effective planned maintenance routines, as listed above.
- Mooring lines must be deployed using leads as approved by vessel's mooring and towing arrangement plan. Any alternate lead must be used with due caution noting that the equipment may not be designed to bear geometrical loading of the mooring lead.
- Special consideration must be given to fittings to be used with tugs. Only leads strengthened and designed for tug use should be used and when possible closed fairleads must be offered. The Safe Working Load (SWL) for all mooring fittings - fairleads, capstans, bollards must be clearly stencilled (bead welding) as per the vessel's mooring plans.
- Vessels must be fitted with fairleads and bollards of appropriate Safe Working Load (SWL). The 'Port Information Guide' identifies the types of tugs that will be used during berthing/unberthing in Port of Fremantle based on each vessel's physical dimensions

- The use of self-tensioning winches in the 'auto-tension' mode is prohibited in the Port of Fremantle.

### Minimum Marine Safety Criteria effective from 01.02.2023:

- Mooring winch brake rendering test for all mooring winches should be carried out at intervals **not exceeding 24 months**, and:
  - after completion of any modifications or major maintenance such as but not limited to, brake liner renewal, brake band adjustments etc
  - where there is evidence of premature brake slippage or related malfunctions
  - when new mooring lines are installed on mooring winches
- Mooring winch brake rendering tests must be conducted as per guidance given in the ISO Standard 3730:2012 and the latest edition of the OCIMF - Mooring Equipment Guidelines.
- Vessel operators are required to consult with the Mooring Equipment manufacturers (OEMs) / shipyards to obtain certified winch brake test equipment to conduct onboard winch brake tests. For onboard testing, the performing crew are to be provided suitable training to safely conduct the procedure with the applicable Risk Assessment. In lieu of onboard testing, the winch brake rendering tests may be conducted by a shore service provider. In either case, photographic evidence of all testing and crew training must be retained on board as objective evidence.
- Vessel operators are to note that the use of made-on-board winch brake test equipment is dangerous and hence is prohibited from use. Results obtained from such equipment will not be accepted.
- Mooring winches should be equipped with a brake setting indicator to provide an easy visual check of the correct adjustment of the brake setting.
- Vessels failing to comply with the above Minimum Safety Criteria may have additional restrictions imposed that may include but not be limited to - weather related restrictions, additional towage attendance while along side a berth, evacuation from berth due to adverse weather conditions, delays in berthing or being deemed unacceptable to call at the Port of Fremantle.

Any queries regarding the above requirements and recommendations must be submitted to the email address: [harbourmaster@fremantleports.com.au](mailto:harbourmaster@fremantleports.com.au)



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Captain Savio Fernandes  
Harbour Master