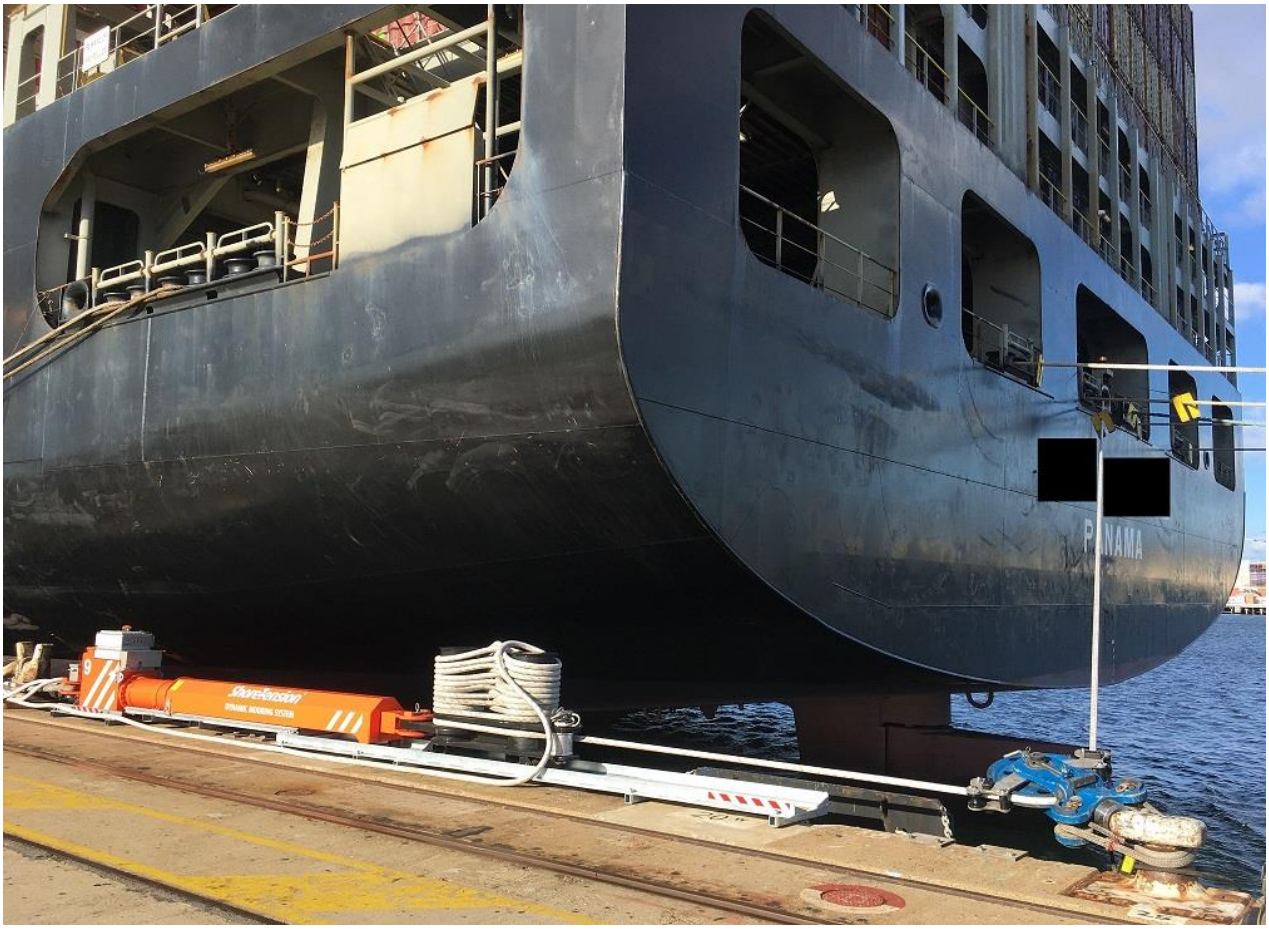
HARBOUR MASTER'S INSTRUCTION 03-2021

Date of Issue: 7 July 2021 HMI 03-2021

Use of ShoreTension® system for vessels in Fremantle Ports - Inner Harbour

This Harbour Master's instruction supersedes HM 01-15 which has now been deleted.



This Harbour Master's Instruction is applicable to all vessels expected to berth in the Fremantle Ports - Inner Harbour. All vessel Masters, Vessel Traffic Service Officers, Port Service Officers, Pilots and Agents are to be familiar with these requirements and with the information provided in the appendix to this Harbour Master's Instruction.

This Harbour Master's Instruction is not applicable for vessels bound for Fremantle Ports - Outer Harbour (Kwinana) berths - ALCOA / Kwinana Bulk Terminal / Kwinana Bulk Jetty / BP / Kwinana Grain Jetty.

Fremantle Ports deploys the ShoreTension® - Dynamic Mooring System as a control measure to prevent vessels in the Inner Harbour, from breaking away from berth during an adverse weather event.

While the units may be deployed during a gale / severe weather warning at any time during the year, the primary use of the units is intended during the period 1 June - 30 September.

The ShoreTension® system is a safety enhancing equipment that also significantly reduces movement of vessels alongside a berth caused by severe winds, currents and swell etc.

The system will be deployed in addition to other risk controls currently being implemented such as - use of the outboard / waterside anchor, deployment of additional mooring lines from the vessel etc.

Between 1 June and 30 September, the following measures shall apply based on assessment by the Harbour Master's Office

- All vessels alongside berths 11 and 12 will be required to use the ShoreTension® system, unless assessed that due to good weather conditions, the deployment is not required
- For vessels alongside container berths CT1-CT4, the ShoreTension® system will be deployed based on a risk-based approach. Considerations include the issuance / forecast of a gale or severe weather warning by the Australian Bureau of Meteorology for the local area, direction of predicted wind (WNW through to NE), forecast of a meteotsunami, windage area of the vessels, previous history of mooring incidents etc
- For berths other than those listed above, the deployment of the ShoreTension® system will decided on a risk-based approach and on a case-to-case basis
- Requests made by vessel's master (through Agents) / Terminals outside off the above mentioned conditions for commercial efficiency reasons will be assessed on a case-to-case basis, the Harbour Master's decision being final. These request must be sent to Fremantle Ports VTS by e-mail.

On completion of deployment of a ShoreTension® system, the Port Services Officers are to inform the VTS.

This Harbour Master's Instruction contains two (2) Appendices, which must be familiarized with, by all vessels and involved personnel.

Captain Savio Fernandes
Harbour Master

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Appendix 1 - ShoreTension® system information sheet

Fremantle Ports Harbour Master's office will follow a risk-based approach taking weather and sea conditions into account to ascertain the risk of a vessel experiencing conditions which could result in the vessel breaking away from the berth.

If there is a perceived risk, then ShoreTension® will be fitted at the time of berthing of the vessel.

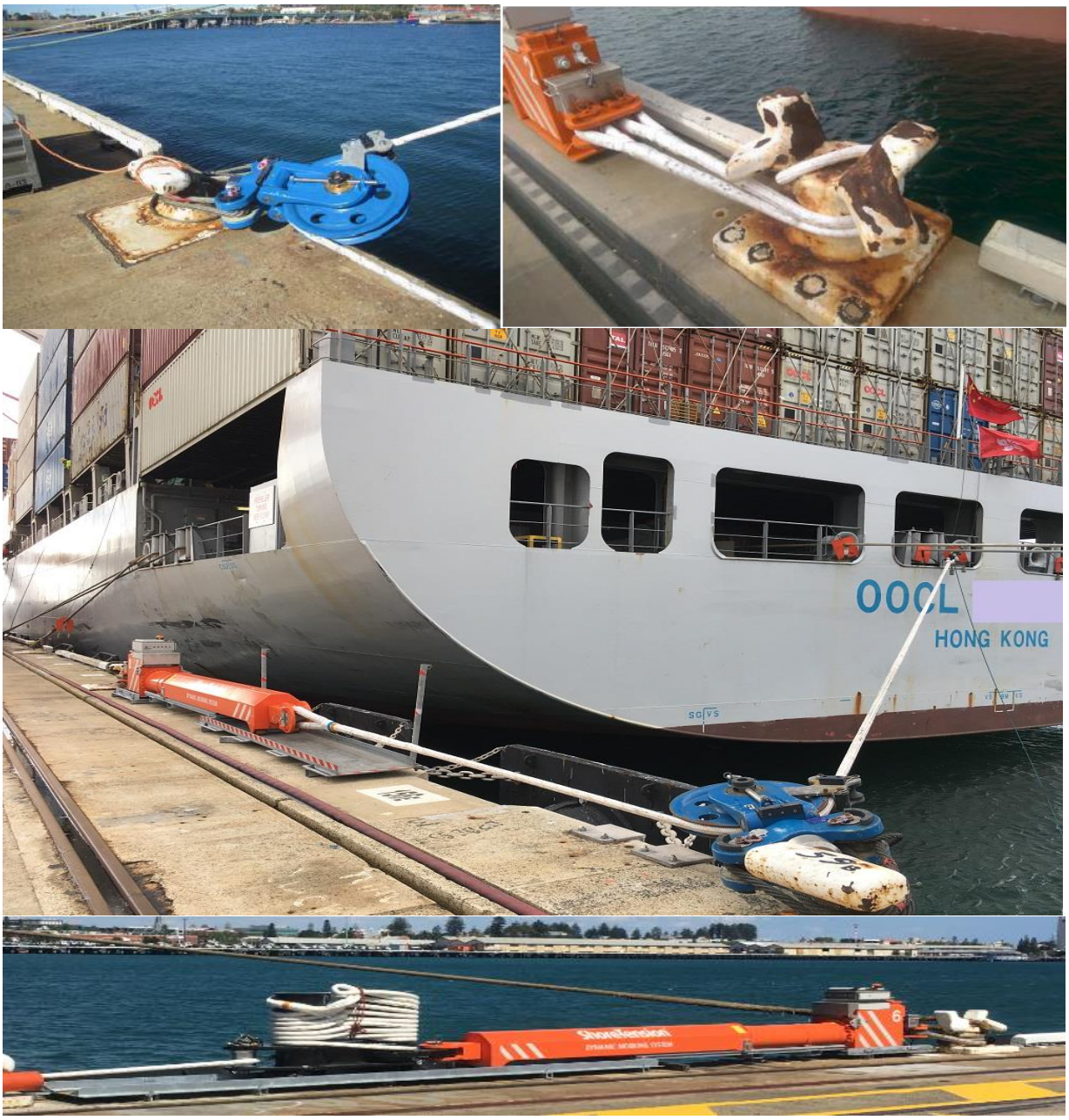

Fig 1: Various components of the ShoreTension® system

Design specifications
The ShoreTension® system units used in Fremantle Ports have a Working Load Limit of 60T.

Installation and use
The ShoreTension® unit and snatch block or sock is secured on the quay between two bollards using strops. The Dyneema® working line (80-95mtr lines) connects the vessel to the ShoreTension® unit (moving end) and the slack is taken up using a winch and then made fast to the Bitts (either on the ship or shore), using a stopper to transfer the line.

The ShoreTension® system will require the centreline forward fairlead and the aft outboard fairlead to be free. This will be used for the ShoreTension® Dyneema® line. A set of bitts located between the fairlead and mooring winch must be made available to secure the Dyneema® line (either by taking turns onboard or securing the eye on the Ship's Bitt as per the same as a tug line when a set of Bitts are on the front of the ShoreTension® unit, as pictured below). Crew are to report the Safe Workin Limit of the Bitts and Fairlead being used and required to take a photo of the Shore Tension line secured on the bitts and send it to the Fremantle Port Services, Team Leader (+61) 0418 945 209

ShoreTension® is only activated once the line is secured to the bitts and the safe working load is set (taking into account the ship's bitts, fairleads, bollards and ShoreTension® equipment). The ShoreTension® mooring system uses stored energy to keep the required tension on the Dyneema® line and only uses pressure when required to keep the ship alongside the quay up to the set safe working limit.

The units take approximately one (1) to two (2) hours to position and setup. If not done at the time of berthing, this will be done at other times when a weather warning is received. Installation of the ShoreTension® system, if conducted after the vessel has completed the berthing process will require the following additional resources and conditions, as applicable

- A-class tugs to attend during any slackening of existing mooring lines
- A marine pilot to direct the tugs
- Mooring lines boats
- All cargo operations are to cease and shore portainer cranes to be clear of mooring areas

Vessels will need to supply a mooring team of three (3) for securing each ShoreTension® line on-board. If two units are to be fitted simultaneously then six (6) will need to be provided.

A video of how to secure the ShoreTension line onboard using the Ships Bitts can be found on the internet via this link: https://youtu.be/Q6ODW9eHOAA

The units will be remotely monitored by Fremantle Port personnel.

It is important that the vessel's crew regularly monitor the ships bitts and fairlead for signs of damage and **keep the vessels lines taut.**

In case of any concerns or queries, the vessel is to contact Fremantle Ports VTS of VHF channel 12.

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Appendix 2 - Instructions for vessel crew

Requirements for crew to place ShoreTension® lines on-board the vessel
Communication with Port Service Officer on the wharf is VHF Channel 8

1. Always pick a safe position to work on deck, never stand in a bight or in the snap back area of a rope under tension. **2. Make sure the turns on the drum are tightly wound to avoid riding turns or slippage which could cause damage to the ShoreTension® line.**	
3. Flake the line on the deck behind the winch and do not coil it. **4. Heave the line up until the Port Services Officer informs you to stop (as a small amount of slack is required).**	
5. Apply a rope stopper to the ShoreTension® line before attempting to secure the line to the bitts.	

6. Walk back or veer the line to the stopper, do not throw the turns off of the winch drum when giving slack for taking turns on the ShoreTension® line to the bitts.
Rather walk back / veer on the winch

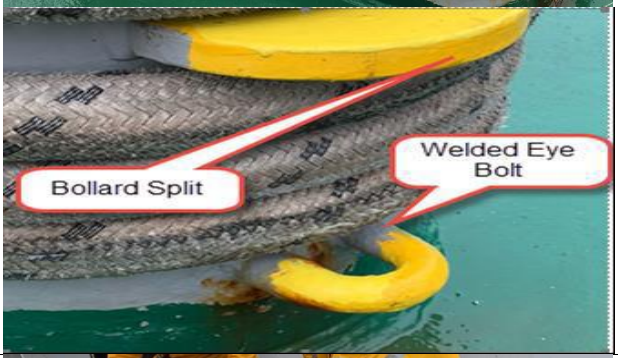
7. Wrap the first turn completely around the back bit and then complete two figure-of- eight turns whipping the line between turns.

8. Place the line back onto the winch and remove any slack from the line on the bollard.

9. The stopper can come off once step 8 is complete.

CAUTION

Make sure the line is not going to chafe on the bollard split or the welded eye bolt.



10. Additional turns are applied in groups of 3 figures of 8 and tightened until there are eight figures of 8 in total on the bitts.

11. Details regarding the SWL of the weakest component (Bitts or fairllead) must be communicated to the Port Service officer over VHF channel 8. **That is the maximum load that will be applied by the Shore Tension ram.** **(1 ton = 9.80665 kN)**	 
Caution: If the fairlead has a lower SWL than the bitts then use the lower SWL Shore Tension will be set at least 10 tonnes *LESS* than the lowest SWL.	 

At no time is the Ship's Crew to loosen or remove any part of the Dyneema® line from the bitts under TENSION without the approval and direction from a Fremantle Port Service Officer.