

# Safe mooring starts at sea

**Captain Ben van Scherpenzeel**, European Harbour Masters' Committee

## Improving the mooring process

The safe mooring of a ship is of utmost importance. The mooring process however appears to be the forgotten link in the nautical chain. This became evident when the European harbour masters decided to make a video about strengthening the whole nautical chain through a greater awareness of all its links. Captain Ben van Scherpenzeel, of the European Harbour Masters' Committee (EHMC) explains: "A captain who has all information while still at sea, can well prepare the mooring of his ship when in port. Too often this information is missing, and one will end up with a mooring process that is less safe and less efficient than we would all like to see."

Mooring activities are a concern because of the number of accidents, the diminishing nautical skills on board ships and terminals, and the apparent lack of knowledge of all the components that affect safe mooring. The workshop 'extreme weather conditions/safe mooring policy' held at the International Harbour Masters' Association (IHMA) congress in April 2010, showed a large amount of uncertainty in day-to-day working practices in the mooring process and acknowledged the fact that safety in mooring is negatively influenced by a lack of knowledge from the whole mooring chain.

Though there are a number of publications on safe mooring (eg. by the Oil Companies International Marine Forum (OCIMF) and the Nautical Institute), there is a definitive lack of education about mooring in the port and shipping community. And there was no training video available that addresses all aspects of mooring, produced with the input of all parties concerned.

## Developing information videos

The first EHMC video 'The chain' is a joint production by all those who are key to the business of bringing ships into port – the nautical chain; harbour masters, agents, pilots, tugboat captains, linemen, ship masters, hydrographic offices and terminal operators.

It was clear that the video was a perfect means of getting a message across therefore, a second video was produced. 'The missing link' shows the entire mooring process, from the production of a mooring line, up to the vessel coming alongside; from the basic rules for a mooring plan, to safe working loads and maximum holding capacities. With good preparations, starting while still at sea, mooring can become much safer and more efficient.

During the making of the film many experts discussed the topics raised and producing one common view was quite challenging. Many best practices are not yet common practice and there is no single set of internationally accepted guidelines for the entire shipping industry for the relation between the mooring components; mooring winch on vessel – mooring line on vessel – bollard/quick release hook on shore.

Common sense dictates that the bollard or quick release hook ashore should always be the strongest part. Another common sense finding is that lines should never break: snapping mooring lines cause many serious personal injuries and fatalities, and may



Figure 1: The bollard ashore is the strongest part of the chain.



Figure 2: Snapping lines can cause fatalities.



Figure 3: Lines must be maintained and handled correctly.

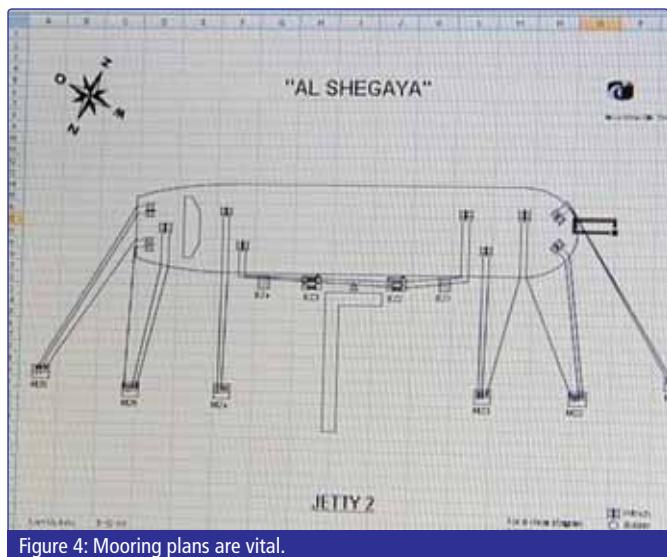


Figure 4: Mooring plans are vital.

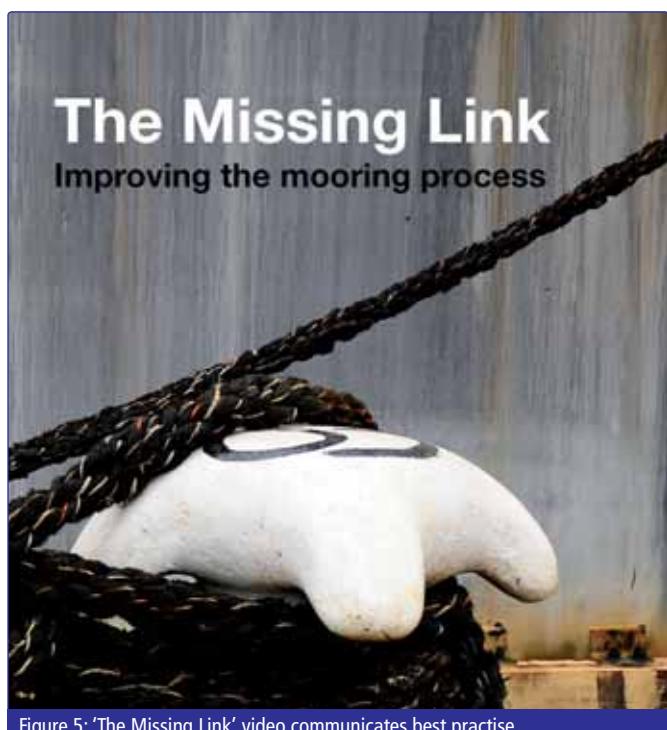


Figure 5: 'The Missing Link' video communicates best practise.

cause serious damage to infrastructure, or pollution. To stop mooring lines from breaking, lines should always be paid out from winches, and the break of the winch should render before the mooring line breaks. This may sound very logical and simple, however, this is not a design rule yet.

Also, clear guidelines for maintenance or replacing mooring lines and the settings of breaks or mooring winches are not implemented across the industry yet. The communication of mooring plans, providing safe working loads and positions of bollards or quick release hook is not a common practice at all terminals.

## Findings of the working group

Some of the findings that the working group brought forward were; clear guidelines for paying out mooring lines: vertical angles should be less than 30 degrees, resulting in a horizontal distance being twice the vertical distance as a rule of thumb. Mooring lines that have the same function should have the same characteristics. Mooring lines are quite different from one another. If they have the same minimum breaking load, that doesn't mean they work together, as they might have a totally

different elasticity. Also, inspection of lines is different per type of line. Per type of line the consequences of snapping lines are totally different. All lines in the same service should have the same tension.

It was also identified that the bollard or quick release hook should always be the strongest component. If not, it may result in a bollard being rocketed to the vessel. It takes little imagination to think that such an incident can result in a fatality. The break of the mooring winch should render before 60 percent of the minimum breaking load of the mooring line is reached. The break should always be the weakest link of all components. Sending mooring plans to the vessel, pilot and linemen prior to arrival is being regarded as a good practice: safe mooring starts at sea. Line handling is a matter of constant awareness. Stepping into a bight is the most common mistake. Line handling is also a matter of communication. Not only by radio; it is also a matter of having eye contact and hand signals. Correct line handling during docking can save a lot of time. If a line gets stuck under fenders when a ship comes alongside, it might force the crew to retrieve the line, and pay it out again. For a large tanker this takes about 20 minutes.

## The objectives of 'the missing link'

It is by communicating and explaining these key guidelines that 'The missing link' intends to improve the awareness of how important safe and efficient mooring operations are and to show the relation between all the mooring components. It does so by considering the whole mooring process, and by showing how to avoid accidents and damage to terminal equipment and vessels while at the same time saving time, money and cut down on emissions. A safer and more efficient mooring process is important to crews, linesmen, pilots, ship owners, ship masters, ports, harbour masters and terminal operators.

The videos 'The chain' and 'The missing link' are both initiatives of Ben van Scherpenzeel for the European Harbour Masters' Committee (EHMC), a regional committee of the International Harbour Masters' Association (IHMA).

### ABOUT THE AUTHOR

**Captain Ben van Scherpenzeel**, director nautical developments, Policy and Plans, Harbour Master's Division Port of Rotterdam, has spent 15 years at sea; three years on tankers and reefer vessels as a deck officer and 12 years on cruise vessels as a deck officer, staff captain, and project manager of new build programs. He joined the Port of Rotterdam in 2004. His responsibilities are projects related to shipping. He is also Project Officer for the International Harbour Masters' Association and European Harbour Masters' Committee.

### ABOUT THE COMPANY

The **EHMC** is the regional European branch within the International Harbour Masters' Association, IHMA, a professional body that unites Harbour Masters and Port Captains around the world. The principle aim and objective is the promotion of safe, secure, efficient and environmentally sustainable operations within ports.

The EHMC looks after the specific interests of members in Europe, offers additional advantages related to that region and is currently chaired by Captain Andreas Mai of the Ports of Bremen and Bremerhaven.

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