



OIL COMPANIES INTERNATIONAL MARINE FORUM

**POTENTIAL HAZARDS ASSOCIATED  
WITH REQUESTS FOR ADDITIONAL  
MOORING LINES BY TERMINAL  
OPERATORS**

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*The OCIMF mission is to be recognised internationally as the foremost authority on the safe and environmentally responsible operation of oil tankers and terminals.*

The Oil Companies International Marine Forum (OCIMF) is a voluntary association of oil companies having an interest in the shipment and terminalling of crude oil and oil products. OCIMF is organised to represent its membership before, and consult with, the International Maritime Organization (IMO) and other government bodies on matters relating to the shipment and terminalling of crude oil and oil products, including marine pollution and safety.

## POTENTIAL HAZARDS ASSOCIATED WITH REQUESTS FOR ADDITIONAL MOORING LINES BY TERMINAL OPERATORS

A number of serious incidents have occurred in recent years involving shore requests for large tankers to moor using additional synthetic lines to supplement their own mooring wires. This paper has been prepared by OCIMF to raise industry awareness of the dangers associated with such shore requests for the provision of additional mooring lines, especially those resulting in mixed (synthetic fibre/wire) mooring arrangements.

Handling of mooring lines has a higher potential accident risk than most other shipboard activities. Attention is specifically drawn to the dangers associated with crew handling additional synthetic lines and shore supplied wires, often with indirect leads, which must be stopped off and made fast to bits.

A prime principle of safe mooring of a vessel is that it is a co-operative venture between the ship and the shore requiring a common understanding of safe mooring practices. To further this endeavour, the Oil Companies International Marine Forum set up a task force to consider current standards and practices and to develop guidance for the safe and efficient design and operation of mooring equipment.

As a result the 2<sup>nd</sup> edition of the ***Mooring Equipment Guidelines*** is now available. This edition updates the original work in light of the revised coefficients in the OCIMF publication ***Prediction of Wind and Current Loads on VLCCs*** ( 2<sup>nd</sup> edition 1995), it incorporates recommendations from ***the Guidelines for the Safe Mooring of Large Ships at Piers and Sea Islands*** (first published in 1978) and sections from ***Recommendations on Equipment for the Towing of Disabled Tankers***.

While the above publication reviews the general principles which govern the restraint capacity achieved by a given mooring pattern, ship and terminal operators alike should have a good understanding of these principles and should recognise the problems which are likely to arise from the use of mixed and/or additional mooring lines. Terminals are advised to develop guidelines for the safe mooring of vessels for their existing operating environment using the following concepts of modern mooring management :

- 1- The overall mooring pattern dictates the load distribution to each individual line. A safe and efficient mooring arrangement can only be obtained through a balanced load distribution.
- 2- Loads in any one mooring line should not exceed 55% of its Minimum Breaking Load (MBL).

- 3- Wire ropes fitted on winches should be standard mooring equipment on all large tankers thus permitting the vessel to remain safely moored alongside the berth under established limiting environmental criteria.
- 4- The use of mixed mooring for similar service, comprising full length synthetic ropes used in conjunction with wires, should be avoided. If a wire line and synthetic line are used together in the same service, the wire line will carry almost the entire load, while the fibre line carries practically none.
- 5- Shore mooring lines, *with adequate tending arrangements*, should only be provided to augment shipboard mooring lines when the operating conditions at the berth exceed the restraint capacity of the vessel's mooring system. The shipboard mooring arrangements should comply with the OCIMF Guidelines.

User-friendly computer programmes are now available to evaluate the adequacy of the mooring system at a terminal known to have unusual environmental conditions or mooring geometry. Mooring line load measurement apparatus is also available with a central read-out in the terminal's operation control room and in some vessel's control room. Such systems have been installed at a number of large tanker berths and at many LNG berths.

The shipping industry has always been concerned with safe mooring practices. These include facilitation of safe and efficient mooring, unmooring and line-tending operations with minimum demand on manpower. This information paper has been prepared to supplement the guidance and information in the OCIMF publications ***Mooring Equipment Guidelines*** and ***Effective Mooring***.

*Issued by the  
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