

CHAPTER 15

Marine Terminal Administration

15.1 Marine Terminal Information System

15.2 Documentation

This chapter describes the Marine Terminal Information System (MTIS), which is designed to improve standardisation of the tanker/terminal interface and to act as a best practice guide to help terminals operate more safely.

This chapter gives guidance on maintaining documentation, including the terminal operating manual and Terminal Information Booklet (TIB).

15.1 Marine Terminal Information System

Terminals must comply with all applicable international, national and local regulations and with the terminal's own policy and procedures. Where a self-regulatory regime exists, terminals should meet the spirit and intent of applicable codes and guidelines for their implementation.

OCIMF has developed the MTIS, designed to standardise the tanker/terminal marine interface, filling the gaps that exist in the international standards for marine terminals and putting in place an accepted format of information collecting and sharing. MTIS also acts as a best practice guide to assist terminals in operating more safely and efficiently. The MTIS database serves as a consolidated safety system, providing terminal and ship operators, along with charterers and associated services, with a single, central storage of terminal specifics in a consistent format. Through MTIS, a range of terminal management documents should be used to assist the marine terminal operator in ongoing review and improvement efforts. These tools include:

- *Marine Terminal Particulars Questionnaire (MTPQ)* is an online tool that captures all relevant terminal information, making it easier for ship programmers, schedulers and terminal operators to share information and assess the suitability of the tanker/terminal interface.
- *Marine Terminal Management and Self Assessment (MTMSA)* is a best practice guide aimed at helping marine terminal operators assess and continuously improve their safety, reliability, efficiency and environmental performance.
- *Marine Terminal Operator Competence and Training (MTOCT)* is a guide aimed to assist marine terminal management assess competencies, identify gaps and develop training for terminal operators.

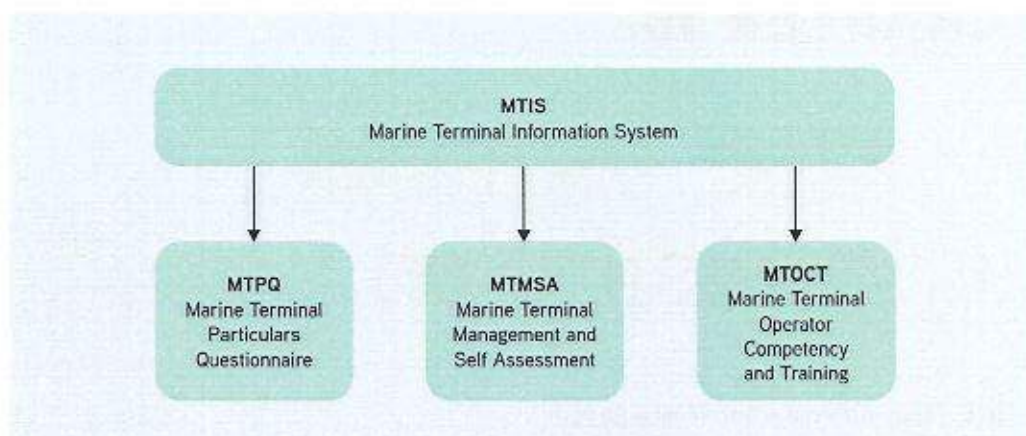


Figure 15.1: Schematics of the available MTIS documentation

15.1.1 Marine Terminal Particulars Questionnaire

The MTPQ is used to collect terminal information in a common format using consistent units of measurement. This collection of comprehensive marine terminal information is essential to:

- Prevent incidents that may harm people or the environment.
- Ensure the compatibility of tankers and terminals.
- Enhance operational efficiency and reliability.

MTPQ database information is available to terminal operators in a format that permits onward transmission. To support the collection of this compatibility information, key information will be input into the MTPQ database, which will assist with tanker to terminal decision making. Criteria for each berth includes as a minimum:

- Berth name.
- Berth type – e.g. jetty, quay wall, sea island or Single Point Mooring (SPM).
- Depth of water – Minimum controlled water depth alongside berth at chart datum.
- Minimum static Under Keel Clearance (UKC) at berth – UKC at berth is represented as a limit in either metres, percentage of draught or percentage of beam.
- Other UKC criteria.
- Length Overall (LOA) minimum or maximum.
- Alongside displacement – The displacement figures should be quoted to define the maximum size of tanker allowed on the berth. A maximum displacement figure may also be quoted for the berthing operation where there are restrictions on berthing energy or load limits on fendering systems.
- Summer deadweight – Note: The use of deadweight as a parameter for setting tanker size limitations is not recommended because this, on its own, is not a measure of size or of total weight of ship for calculation of berthing energies.
- Maximum beam – This is required to manage restrictions imposed by a lock, dock or river transit.
- Bow to Centre of Manifold (BCM) – This is used to ensure alignment between tanker and terminal manifold connections.
- Manifold height above the water – maximum and minimum – This is to ensure that the tanker can keep the cargo transfer systems (arms/hoses) connected throughout the load or discharge and at all states of the tide. At some tidal locations it may be necessary to disconnect the Marine Loading Arms (MLAs) during tidal extremes.
- Stern to Centre of Manifold (SCM).

- Manifold presentation flange to ship side.
- Minimum Parallel Body Length (PBL) – This is used to verify whether the tanker will rest against the fenders under ballast or under loaded conditions, when in position with the cargo connection made.
- Minimum PBL forward of manifold centreline.
- Minimum PBL aft of manifold centreline.
- Security procedures.

In documenting these criteria, care should be taken in establishing the baseline data from which they are derived and ensuring that they are correctly reconciled. In addition, terminals should clearly identify the units of measurement used.

Other criteria may be considered depending on the design configuration and the operation to be handled.

For more information on SPM, All Buoy Mooring (ABM) or Conventional Buoy Mooring (CBM) berths, refer to OCIMF's *Single Point Mooring Maintenance and Operations Guide* and *Guidelines for the Design, Operation and Maintenance of Multi Buoy Moorings*.

15.1.2 Marine Terminal Management and Self Assessment

Terminals should have a documented management system to demonstrate compliance with regulatory requirements and the terminal's policy and procedures. Terminal management should designate a person to be responsible for ensuring compliance with the regulations, company policy and procedures.

Terminal management should provide a healthy and safe work environment and ensure that all operations are conducted with minimum effect on the environment while complying with the regulatory system in force and recognised industry codes of practice. Reference should be made to the guidance contained in OCIMF's MTMSA. MTIS includes an MTMSA Site Verification Guideline (SVG) to help assessors review the self-populated MTMSA against the terminal site. Terminal operators are encouraged to keep a completed SVG as documented evidence of their self assessment.

The self assessment process covers principal areas of management practice together with supplementary elements that address buoy berths and operations in ice or in severe sub-zero air temperatures:

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| Element 1 | Management, leadership and accountability |
| Element 2 | Management of personnel |
| Element 3 | Port and harbour operations |
| Element 4 | Terminal layout |
| Element 5 | Ship/shore interface |
| Element 6 | Transfer operations |
| Element 7 | Maintenance management |
| Element 8 | Management of change |
| Element 9 | Incident investigation and analysis |
| Element 10 | Management of safety, occupational health and security |
| Element 11 | Environmental protection |
| Element 12 | Emergency preparedness |
| Element 13 | Management system review |

Supplementary Elements:

Element 14 Operations at buoy moorings

Element 15 Terminals impacted by ice or severe sub-zero air temperatures

15.1.3 Marine Terminal Operator Competence and Training

Terminal management should ensure that personnel engaged in tanker/terminal operations are trained and competent in their duties. Personnel should be aware of national and local rules and of port authority requirements that affect terminal operations and the way they are implemented locally.

OCIMF's *Marine Terminal Operator Competence and Training Guide (MTOCT)* helps marine terminal managers ensure the personnel operating the marine interface have all the necessary skills and experience. Terminal personnel should be familiar with the sections of this document that are applicable to their work location and duties.

MTOCT helps identify competences and knowledge requirements for roles, together with verification processes, enabling terminal managers to assess each member of staff against best practice, identify gaps and develop targeted operator training programmes. *MTOCT* includes guidance on training records and verifying that the training programme is achieving set goals.

15.2 Documentation

15.2.1 Terminal operating manual

Terminals should have a documented Terminal Operating Manual that is reviewed annually.

The Terminal Operating Manual is a working document that details procedures and drawings relevant to the terminal. The Manual should be available in the working language of terminal personnel.

The Terminal Operating Manual should define the roles and responsibilities of berth operating personnel and the procedures associated with emergencies such as fire, gas cloud, product spillage and medical emergencies. A separate emergency response plan should be provided to cover such topics as emergency call out procedures and interaction with local authorities, municipal emergency response organisations or other outside agencies and organisations. See chapter 20 for detailed guidance on emergency planning and response.

15.2.1.1 Operating procedures

Operating procedures provide personnel with access to documented instructions detailing how to safely operate the marine terminal. Procedures should be available, using simple language and, at a minimum, include:

- Terminal plan drawings.
- Vessel acceptance criteria (berth limits).
- Limiting weather conditions for operations (see section 16.1).
- Mooring guidelines.
- Safe tanker/terminal access.
- Cargo transfer.
- Cargo transfer equipment operating procedures.
- Static electricity precautions.
- Tanker/terminal electrical isolation.

- Fire and emergency response, including emergency evacuation plans.
- Environmental protection, including management of surface water, leakages, and spills.
- Hazardous products and vapours.
- Visitor induction and familiarisation.
- Shift handover.
- Gauging and sampling.
- Cargo line and sump tank draining.
- Routine cleaning procedures.
- Control and shutdown procedures, including Emergency Shutdown (ESD) and ship/shore link (where fitted).
- Bunker operations.
- Plan of firefighting systems locations.
- Standby tug operations.

15.2.1.2 Organisation roles and responsibilities

Clearly defined roles and responsibilities enable marine terminal management to ensure that personnel responsible for activities at the tanker/terminal interface are trained, qualified and supervised.

All roles and responsibilities for marine terminal personnel (employees and contractors) working within the tanker/terminal interface should be defined and documented. Delegation of authorities should also be documented. Personnel assigned to identified roles should be verified (using *MTOCT*) as competent. Manning levels should be sufficient to meet all operational requirements, considering:

- Effective monitoring and continuous supervision of operations.
- Size of the facility.
- Volume and type of products handled.
- Number and size of berths.
- Number, type and size of tankers visiting the terminal.
- Degree of mechanisation employed.
- Amount of automation employed.
- Ancillary duties for personnel.
- Firefighting duties.
- Fluctuations in manpower availability due to holidays, illness and training.
- Personnel involvement in emergency and terminal pollution response.
- Terminal involvement in port response plans, including mutual aid.
- Security.
- Liaison with port authorities and adjacent or neighbouring marine terminal operators.
- Personnel requirements for port operations including pilotage, mooring boats, line handling and hose handling. Note: If mooring boats and line handling are provided by the local port authority or by their contractor, they should comply with terminal safe mooring requirements. More information can be found in section 9.7 and in OCIMF's MTMSA.

When considering the effective monitoring of the tanker/terminal interface, good operating practice requires a competent member of the terminal organisation to be on duty in the vicinity of the tanker to terminal connections. This level of supervision should be aimed at preventing hazardous situations developing and be based on risk assessment.

In establishing manning levels, due account should be taken of any local or national legal requirements. Consideration should also be given to the avoidance of fatigue, which may result from extended hours of work or insufficient rest periods, by providing time off between shifts.

More information can be found in OCIMF's *Manning at Conventional Marine Terminals*.

15.2.2 Terminal Information Booklet

Terminals should have procedures in place to manage the exchange of information between the tanker and the terminal before the tanker berths. This will ensure the safe and timely arrival of the tanker at the berth, with both parties ready to commence operations.

Detailed information on communications at the tanker/terminal interface is given in chapter 21. More information can be found in chapter 6 on security at the tanker/terminal interface.

The format of the TIB should follow OCIMF's *Marine Terminal Information Booklet: Guidelines and Recommendations*. This guidance gives terminal operators a template for presenting important terminal and port information in a booklet, for easy and consistent reference by ship personnel, shipowners, operators, charterers and others.

The TIB can be stored as an attachment to the MTPQ to facilitate access for stakeholders and to ensure the latest version of the TIB is always available.

15.2.3 Documentation

Terminals should maintain a set of documents to ensure compliance with regulations, procedures and industry practices. These should provide comprehensive information on the facilities and equipment associated with the management of the tanker/terminal interface.

Documentation should provide current information on topics that include the following:

- Legislation, including national and local operational requirements and health and safety legislation.
- Industry guidelines and company policies.
- Operating manuals, maintenance and inspection procedures and site plans and drawings.
- Records of internal and external audits, government inspections, health and safety meetings, permits to work and local procedures.
- Certificates for equipment and processes.

15.2.3.1 Inspection maintenance and repair documentation

Documentation should include a comprehensive set of 'as built' construction drawings and specifications for both berth and terminal facilities, including operating envelopes for MLAs or hoses and all modifications made since first commissioned.

A current record of equipment and structures important to the safe operation of the terminal should be maintained. This should include specifications, purchase orders and inspection and maintenance data. Examples of important items include:

- Dock and approach trestle structures.
- Fenders and mooring hardware.
- Safe access, including gangways and access towers, ladders, catwalks and handrails.
- Lifting equipment.
- Cargo transfer equipment, including MLAs/hoses, hydraulic systems, Vapour Emission Control Systems (VECSs), monitoring and warning systems, ESD systems, large valves, pumps, and meters.