

E.4 Manning and training

Vessel Minimum Safe Manning Requirement – Refer to Ship’s Certificatefile with Master

Master or Chief Mate in capacity of safety officer and Master’s delegate have to verify that all persons involved in the mooring and unmooring operations are called well in advance (at least 30 minutes before start the maneuver). Sufficient number of crew members must be used in mooring or unmooring operations in accordance with following guidance:

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Notes: Mooring Team Components:

Forward-

1 Deck Officer (Person-In-Charge) + Boatswain + 1 Ordinary Seaman

Aft-

1 Deck Officer (Person-In-Charge) + 1 Able Seaman + 1 Able Seaman.

Bridge-

Master (Person-In-Charge) + Deck Officer + Helmsman + Look Out

Above list is just an indication of generic Risk assessments and does not include any ship specific operational risk assessment.

The Master can, depending on the circumstances, in any moment change the above mooring team component list.

Once the helmsman and lookout duties are not required on bridge & same is confirmed with pilot /master, crew member to be sent to respective stations Fwd./Aft on deck.

Any third-party personnel or contractors for example assistant mooring master must be duly supervised and their safety to be ensured by the respective station Person-in-charge.

Responsibilities

Marine Superintendent (MS):

Responsible for:

- Monitoring, defect and maintenance & reports.
- Review of Quarterly mooring equipment status report and for taking immediate corrective measures for items considered critical for safe mooring operation.

Master (M):

Ensure that:

- Correct mooring practice and procedure are followed on board always.
- Prior to entering a port or place of destination, or prior to getting underway, mooring/ unmooring plan is discussed with the pilot or mooring master.
- Officers/ crew are apprised of the plan and ensure safe mooring practices are followed.
- All mooring operations are conducted safely and efficiently.
- Information relating to safe approach, mooring and cargo hose connection procedures are available in advance.
- Such information can be obtained from local agents, mooring master and Terminal handbook.
- If the defects found are not repairable by ship's personnel, office to be advised
- Risk assessment is carried out and equipment or mooring system is safe for use.
- Officers and crew are briefed of additional safety measures to be taken.
- Execution of approach and mooring operation is closely monitored.
- Vessel is safely moored always, taking into consideration factors such as weather, tide, currents, ice, passing traffic etc.
- Deployment of additional moorings and/or engagement of tug(s) to prevent a break away from berth is considered
- In case of any emergency, initiate emergency response as per procedures.

Chief Officer (CO)

Ensure that:

- pre-arrival checks carried out for the mooring operation
- all components of the mooring system are visually examined prior to entering a port or place of destination, or prior to getting underway.
- Vessel trim and draft is suited to the approach and stay at the terminal is monitored
- All crew and officers associated with specific mooring activity are trained and oriented.
- Ship specific mooring training is conducted for all deck personnel as involved & specific duties to be assigned like winchman, rope handler etc.
- All crew associated with mooring activities are properly trained and familiarized with the operation.
- Mooring equipment is well maintained and monitored throughout the Stay.

Chief Engineer (CE)

- Maintain all machinery in a state of readiness to allow the vessel to always moor and depart safely.
- Ensure ship machinery including mooring equipment is well maintained, any defects are addressed.
- Provide technical guidance and assistance in event of any mechanical failure or emergency.

Officer on Watch (OOW)

- Monitor the vessel condition while moored at the terminal.
- Maintain effective communication with the watch keepers.
- Maintain close contact with the terminal, VTS, for any traffic and weather information.
- Monitor any craft alongside, if used at the terminal.
- Ensure that mooring is regularly tended to.
- Keep watch on the ships passing and berthing in close vicinity, report same to Chief Officer and master.
- Ensure that mooring stations are manned and tended.

Deck Watch Ratings

- Maintain efficient watch keeping and communication with officer in charge.
- Keep watch and tend to moorings regularly.
- Keep watch on the ships passing and berthing in close vicinity, report same to OOW promptly.
- Keep SPM/FPSO watch, report mooring chain tension and direction promptly when stationed forward during such operation.

Caution: Mooring operations have a high potential accident risk and it is important that all personnel involved appreciate those risks and make every effort to reduce them.

Person in Charge **must** recognize that proper management of mooring operations is essential for the safety of the ship, the crew, the terminal and the environment.

Competence and training

To ensure a safe and efficient mooring operation:

- All involved personnel should be trained and verified as competent.
- The competence of mooring personnel on shore cannot always be assessed or controlled by ship's personnel and vice versa.
- Both parties should accommodate the potential limitations of the other party during the mooring operation.

Company has a competence management system to assure and develop competence and it includes the following:

- The underpinning knowledge of the job, e.g. awareness and familiarity of crew for mooring operations.
- Technical competencies, which are task related and enable the job to be completed safely. They are typically job or occupation specific and the objective is to meet minimum standards of performance, e.g. ship or ship operator specifics regarding each piece of mooring equipment.
- Non-technical competencies, which are behaviors that contribute to good performance and require

knowledge and skill during the job. Examples include the ability to plan effectively, work well with other team members, coach or motivate others and communicate well.

Competent people can, and do, make mistakes. Understanding the range of human factors that impact performance will allow a design that can be operated and maintained effectively.

Existing processes are utilized to assess competence and assure the effectiveness of training. Training and/or qualifications alone will not necessarily mean that a person is competent, but they are likely to result in a basic level of competence.

Training should not be limited to the use of mooring equipment.

- It should include the correct maintenance, testing and routine care of the equipment.
- This should be done in accordance with manufacturer's guidelines and industry norms and should be incorporated in the ship's PMS.
- Regularly carry out safe mooring campaigns.
- These should include human safety and shared learning from near misses and accidents in the fleet.

The on-board training for mooring equipment and operations are carried out at regular intervals and especially a complete briefing is to be carried out for the new joiners who are part of mooring stations. Any third-party personnel shall not be given independent duty in a mooring operation, they shall remain under supervision of Person-in-Charge of mooring station.

Training Needs Analysis (TNA)

TNA approach is a structured approach for assessing training requirements and could be utilized to identify the best means to meet competence requirements.

TNA includes three stages:

- task analysis;
- training gap analysis; and
- training options analysis to identify the best means to meet any skills gap.

On-the-job development, refresher training, coaching and mentoring are also significant elements for developing and continuing to develop competence.

Developed TNA analysis may be structured subject to competency assessment. Such assessment may take place for competency on various tasks associated with mooring operations such as:

- Replacing of mooring lines;
- Mooring operations;
- Turning Mooring wires end to end;
- Inspection techniques;
- Maintenance techniques;
- Incident/ near miss assessment;
- Other;

A guide on competency assessment is described in below Table:

Sample of Competency assessment of mooring tasks

Competency	Replacing ropes on drum	Mooring operations
Competency requirement	<ul style="list-style-type: none"> To understand the process followed; To know the necessary equipment needed; Other. 	<ul style="list-style-type: none"> Demonstrate full understanding of safe mooring practices; Other.
Recommended Knowledge requirements	<ul style="list-style-type: none"> Handling of ropes; Unpacking of new ropes from reel; Safe working practices; Other. 	<ul style="list-style-type: none"> Clear and concise communications with all involved parties Limitations on vessels mooring equipment and fairleads; Knowledge on different type of mooring ropes, application and restrictions; Use of rope tails; Use of messenger lines; Use of Stoppers; Safe working practices; Other.
Key Criteria for evaluating competence	<p>A competent person should demonstrate that:</p> <ul style="list-style-type: none"> Has understanding on uncoiling of new ropes and ensures that new rope bends in the same direction during installation; Has knowledge on use of turntables; Has a knowledge in protecting new wire rope from any ingress of grit or other contaminants. Other. 	<p>A competent person should demonstrate that:</p> <ul style="list-style-type: none"> They have understanding of safe mooring practices and be able to participate in toolbox meetings They have the ability in managing loads on mooring once vessel is secured The have the ability to respond effectively to emergency situations Other.
Method assessing competence	<ul style="list-style-type: none"> Observation and/or questioning 	<ul style="list-style-type: none"> Observation and/or questioning



Crew Familiarization - Joining A New ship

Vessels' crew who is engaged in the operation of ship's mooring equipment must be familiar with its operation and capabilities.

In this respect, whenever new ratings/ deck officers join the vessel, they should be familiarized by senior and experienced officers following a process including but not limited to the following and recorded in the familiarization record:

- a) Type of vessel mooring line apparatus;
- b) Standard operating procedures;
- c) Related hazards during mooring with reference to past related incident and/or near misses;
- d) Any special design parameters associated with the vessel;
- e) Operational procedures and characteristics of mooring winches;

All trainees and cadets are to be given adequate training and supervision during mooring operations as per training record books. Trainees and Cadets should not be given duties or responsibilities for mooring operation.