Mooring Deck Safety (DNV Certified) — study guide

Mooring is a routine operation that kills and injures people every year, almost always through parted lines and snap-back. This guide covers the team, the planning, the signals, the equipment and the habits that keep a mooring station safe.

The mooring team and roles

A mooring team includes the Winch Operator, the Deckhand, and the Person in Charge of the Mooring Station. Deckhands handle the lines that moor the vessel, work under supervision, and are responsible for making sure the lines are secured correctly. The Person in Charge oversees the team and must maintain control and oversight. The Master directs the operation, but is **not** required to be physically present on the mooring station.

Planning and preparation

Before any mooring, consider the weather, deck hazards and lighting. Prepare the area with safety in mind: restrict access to the mooring lines, label and paint safe working areas and hazards, apply non-slip treatment to decks, and light the mooring area adequately — sufficient lighting lets the crew avoid trips, falls and other deck hazards. Berthing is influenced by ship and berth size and by traffic.

Hand signals

Standard signals matter. An outstretched arm with a flat open hand waved downward means **stop**; a circular movement of the hand above the head means **heave away**; an outstretched arm pointing down and making a circular motion means **let go**.

The mooring plan

A professional plan follows fixed rules: headlines primarily prevent the bow from moving astern; mooring lines should not overload the quick-release hook ashore; spring lines should be placed as parallel to the vessel as possible, and breast lines perpendicular to it. While lines in the same service should work together, they do not always need the same diameter. Once the vessel is in position it is secured with breast lines, stern lines and spring lines. During the operation the Master and Pilot may make last-minute adjustments based on changing weather.

The biggest hazard

The biggest single hazard is a line parting with little or no indication. Because a snapped line can reach anywhere in the area, the whole mooring area should be treated as a potential snap-back zone — not just the parts that look dangerous. Once a tugboat has secured the mooring line, the station crew confirms to the bridge that the line is secured.

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PPE and personnel

Mooring is not exempt from PPE. Wear a hard hat with a chin strap, safety goggles and high-visibility coveralls; add gloves when handling wire ropes. The crew involved must be competent, trained and aware of the agreed safety measures, and each deck mooring location needs enough experienced people.

Equipment and lines

Mooring equipment failure is mitigated by regular inspection, with defects or damage repaired or replaced promptly and on time. A management plan for inspection and maintenance should include procedures for identification, operation, inspection and maintenance of all mooring equipment, criteria for replacement based on the manufacturer's information, and a record of the original design concept plus inspection and maintenance history. Ropes must be arranged properly: laid out along the deck without tangles or knots, with the messenger line tied around the rope, pulled through the fairlead, and left on the bulwark ready for throwing. Aramid fibres are susceptible to axial compression — deformation or compression under loads acting along the length of the line. The mooring safety process also includes confirming the ship's equipment is in good working order and the manoeuvring equipment is ready for use.

Rules and communication

SOLAS regulation II-1/3-8 was revised by the Maritime Safety Committee to prevent unsafe working conditions during mooring operations. Mooring terminology is part of STCW: the International Maritime Organization's Standard Marine Communication Phrases are the required standard.[1][2]

Key facts to remember

- Team: Winch Operator, Deckhand, Person in Charge of the Mooring Station.
- Plan: check weather, deck hazards and lighting; prepare safe, labelled, non-slip, well-lit areas.
- Signals: waved-down open hand = stop; circle above head = heave away; arm down, circling = let go.
- Lines: springs parallel, breasts perpendicular; headlines stop the bow going astern.
- Biggest hazard: a line parting with little or no indication — treat the whole area as a snap-back zone.
- PPE: hard hat with chin strap, goggles, hi-vis coveralls; gloves for wire ropes.
- SOLAS II-1/3-8 (revised by MSC); mooring terms follow STCW / IMO Standard Marine Communication Phrases.

Sources

1. SOLAS Chapter II-1, Regulation 3-8 — Towing and mooring equipment (revised by the IMO Maritime Safety Committee).
2. STCW Convention and Code, and the IMO Standard Marine Communication Phrases

(SMCP) — mooring terminology and communication.