

EXERCISES
Watchkeeping in port

### 1. Master's Responsibilities

The Master must ensure that watchkeeping arrangements are adequate for maintaining a safe deck watch taking into account the prevailing circumstances and conditions.

In particular, he must ensure that the efficiency of all watchkeeping personnel is not diminished by tiredness and that duties are so organised that the first watch and subsequent relieving watches are sufficiently rested and otherwise fit for duty.

### 2. Watch in port

The deck watch is organised in port with :

- Officer on duty
- Helmsman on duty
- Gangway watchman (either ship or external watchman)

If there are no cargo operations, the Helmsman on duty can be the gangway watchman if it is possible.

Unless otherwise instructed by the Master, this deck watch is kept in all circumstances while in port.

### 3. The role of deck watch

The role of watch is established at the beginning of the voyage by the Chief Mate, in accordance with the directives of the Master and in conformity with the instructions of the Company and of the STCW 95 convention.

They are modified if necessary at each change of crew.

The watch list is displayed on the bridge, in the engine control room and in the ship's office or similar place.

### 4. Alarm management monitoring

The officer on duty is in charge of the monitoring of the deck alarms (ballasting, drainage, etc) and fire alarms, and checks the proper running of this equipment.

All the other alarms are under the responsibility of the engineer on duty who informs the Officer on duty on all safety and security matters in case of problems.

**Attached:** Blank Watch roll form

EXERCISES
Chief Mate's Instructions

## 1. Introduction

The Officers of the deck watch need to clearly know the behaviour that the Chief Mate expects from them when he entrusts them with the responsibility of the cargo handling operations management.

By his **standing and special instructions**, the Chief Mate will therefore give clear and unambiguous written instructions and directives.

## 2. Chief Mate's standing instructions

The Chief Mate will present his standing instructions to the Master for approval when joining the ship.

The Officers of the deck watch will read and sign them at the beginning of the voyage.

These instructions will be at the disposal of all personnel in the **"CARGO OPERATION MANUAL"** following this sheet.

Chief Mate instructions may deal with the following points (but not limited to):

- Ballasting
- Bilge pumping
- Lashing and management of lashing equipment
- Management of reefer units
- Instructions to Reefer man
- Alarms Management
- Dangerous cargo
- Mooring arrangement
- Gangway access to ship,
- Hatch cover moves
- Provision cranes and cargo cranes
- Instructions to the gangway watchman
- "Lines of communications available between the ship and shore personnel, including port Authorities, in the event of an emergency arising or assistance being required"  
(cf. STCW 95 Section A –VIII/2 Part 4)

## 3. Chief Mate's special and temporary instructions

When needed, the Chief Mate can issue **special and temporary instructions** concerning the safety, the security and the cargo handling operations. These instructions are recorded in the Cargo Record Book. When taking over, Officers must read and sign these instructions.

In case of any doubt, the Officer on duty must get clarification from his predecessors or from the Chief Mate.

**Attached:** Chief Mate's Permanent Instructions

EXERCISES
Chief Mate's Instructions

## **Chief Mate's Standing Instructions**

### ***Ballasting procedures***

All ballasting and de-ballasting carried out by Ch. Mate, or by his direct order. OOW will be informed about ballasting operations carried out and should be familiar with monitoring of ballast water level.

If required, OOW will check the ballast water level in tank. During ballasting operations OOW should visually check (if possible) tank top in area where ballasting is done/or manholes to the specific ballast tank. If or any other deformation is discovered in that area the chief mate must be immediately informed. Also in case of overflow of ballast water on deck, on the pier, or on small craft alongside (bunker barge, provision barge tug, pilot boat, etc.) the chief mate must be informed immediately.

### ***Bilge drainage***

Bilge drainage to be done only by chief mate.

### ***Lashing***

The OOW must check all that lashing is done as per cargo securing manual, or by special instructions given by the chief mate. He should ensure that there are always enough lashing materials so the lashing crew can safely perform their duty. Special care must be taken to ensure of the entire person who are currently working in area where lashing operations are in place.

### ***Management of reefers***

All reefer containers loaded must be checked to ensure that there is no damage to the container, which could lead to the improper functionality to the reefer container. Also upon connecting, proper condition of the container must be check by electrician. Deck crew should be aware that often the stevedores would switch off the reefer container to avoid blowing the air from container directly to them. So special care is to be taken in the area where reefer containers are and stevedores are working too.

### ***Alarm management***

All deck alarms have to be acknowledged and reported to the chief mate. The OOW during cargo operations have the possibility to hear all deck alarms. All deck alarms are connected to the UHF transmitter, and OOW the alarm signal on his portable UHF. Upon hearing the alarm signal, OOW will check the alarm display panel and acknowledge the alarm or/and inform the chief mate about it.

### ***Dangerous cargo***

Upon loading dangerous cargo container(s) the OOW must check that the container(s) are in good condition (without damage or cargo leakage or anything out of ordinary), and he must check that

EXERCISES
Chief Mate's Instructions

container(s) are properly marked(labels, showing the IMDG class of cargo inside, on all sides of the container).

### ***Hatch cover movement***

The OOW shall arrange that all hatch covers before opening are unlocked and all ventilation dampers are closed. All lashing or any other material which can fall from the hatch cover while is being operated must be removed from it. The stowage of the hatch covers on pier or on board must be according to the cargo-securing manual. Before closing, OOW must check that container stack are too high and that hatch cover can be closed without making any damage (to hatch cover or on cargo), and that no objects can be trapped (turnbuckle, twist locks, bars, reefer cables) under the hatch cover. Check that all resting pads are in position, and that the area under the hatch cover is clean from any kind of dirtiness. Immediately after the hatch covers are laded back on board and in proper position they must be properly locked (secured).

### ***Mooring and gangway watch***

During the ship's stay in port is important that the mooring lines are always "working well" and tight. Normally the mooring winches will be set to automatic tension, and follow the ship's movement. If the mooring winches are set to, manual tension more frequent checking of the mooring lines is necessary. The mooring lines must be regularly checked while in port. In case of breaking of rope or any kind of damage, the rope must be immediately replaced with new one. In case of breaking of 2 or more lines, immediately all the crew must be mustered and chief mate, duty engineer and captain to be informed. In case of breakdown of mooring winches or windlasses, duty engineer must be informed immediately.

The gangway must be monitored all time for safety and security purpose. Safety net must be prepared as soon as the gangway is lowered and must stay on the gangway until it is pulled up and properly secured. Special lookout is to be in ports with high tidal ranges. On discovery of any kind of damage, chief mate must be informed immediately. On discovery of large damage to the gangway or gangway wire ropes, no one should be permitted to use the gangway until the problem is solved.

### ***Visitors in port***

All visitors must be identified as per ship's security plan. No visitors onboard without captain's permission. No one should be allowed to go into the accommodation without escort and without informing the officer whom visitor is going to. The term visitor is applied to all persons who are coming on board in the port. Port authorities, ship's agent, stevedores, etc

EXERCISES
Chief Mate's Instructions

DECK OFFICERS TO READ AN SIGN

2<sup>nd</sup> Officer: \_\_\_\_\_

3<sup>rd</sup> Officer: \_\_\_\_\_

Noted by Master

Chief Officer:

\_\_\_\_\_

<b>EXERCISES</b>
<b>Officer in charge of deck watch</b>

## General

While in port, the Officer on duty is responsible of the safety of the ship and persons on board.

He will ensure that persons working on deck are fully complying with safety instructions concerning compulsory personal protective equipments (safety helmet, gloves, safety shoes, high visibility jacket).

He will make sure that procedure for safe working practice described in the procedures of the SMS is complied with.

He always advises the Chief Mate in case of any doubt and immediately when any incident or accident occurs.

If the Chief Officer is not available, the Officer on duty will directly report to the Master for all safety matters.

He is responsible in particular of the following points:

### 1. Monitoring of the ship and of its environment

#### a) Tides

Low and high tides and water levels during ship's call will be displayed in the deck office and on the Bridge.

In some ports, specific measures must be taken in case of important tide race ("mascaret" on river Seine)

Examples:

- Main engine and thrusters ready for use
- Crew at manoeuvring station,
- Gangway raised up
- One man ashore
- Etc....

#### b) Weather conditions and sea state

Weather conditions must be monitored on a regular basis while in port. The Officer on duty will, at all times, use all means at his disposal to anticipate the arrival of bad weather:

- Observation of wind force/direction and sea state
- Close watch over the barometer
- Regular achieving of weather charts (by facsimile or other mean)
- Reading weather reports (Navtex, Safetynet, Reports issued by the port, etc.)

#### c) Accommodation ladder

Supervision must be increased in ports with high tidal ranges and in river ports.

The Officer on duty has to check that the accommodation ladder is safe:

- Properly rigged according to rules and safe practise (clear of crane rails, bollards, etc...)
- Safety nets properly fitted
- Gangplank correctly secured (if fitted)
- Easy access
- Safety and security warnings fitted down and up the gangway
- Life buoy ready for use

#### d) Mooring

The moorings as well as the proper working of winches have to be monitored constantly taking into account the tidal range, current, traffic and changes in drafts and particularly in river ports with strong currents and high tidal ranges.

Immediately advise the Master and the Chief Mate in the event of broken hawser or in case of accidental unberthing and take any action following the instructions of "Accidental unberthing" procedure Em'cy-100 in the EMERGENCY SITUATIONS MANUAL.

See also procedure Cargo-801 dealing with the use of winches.

#### e) Lighting

<b>EXERCISES</b>
<b>Officer in charge of deck watch</b>

Deck Lighting must be switched on in all decks and on the gangway at sunset and in restricted visibility. Cargo Holds must be permanently lighted during cargo handling operations. The seaside lighting will be switched on following SSO instructions.

Crane booms exceeding the ship's beam must be lighted and the obstruction light (fixed red light on the crane) switched on.

**f) Flags**

The Officer on duty ensures that the appropriate flags are shown on day time.

**g) Cranes:**

- Provision Cranes should always be at sea position if not used. After being used, they should be immediately secured for seagoing.
- Ship Cargo Cranes, when not used for Cargo operations, should be positioned in such a way they should not interfere with port facilities (example: Gantry Crane).

## **2. Safety / Security**

The Officer on duty is responsible for the safety of the ship. He is aware of all instructions issued by the Master and the Chief Mate.

In an emergency threatening the safety or security of the ship, the Officer on duty will raise the alarm, inform the Master, take all possible measures to prevent any damage to the ship, its cargo and persons on board, and if necessary request assistance from the shore authorities or neighbouring ships.

**a) Deck and fire alarms**

When taking over the watch, the Officer on duty will ensure that the monitoring of alarm is correctly switched on (switch "Port/Sea" in correct position, forwarding of alarms to the Officer on duty by any device properly switched on).

Fire detection the Officer on duty has to check that the Fire Detection Unit is working properly and that no detectors, no loops of detectors have been isolated. Notify the Chief Mate in case of failure of the alarm units. In case of a fire alarm, he will immediately check the area concerned and raise general alarm if necessary.

**b) Visitors on board**

- refer to **Ship Security Plan (SSP)**

**c) Work carried out on board and under water works**

The Officer on duty is informed of the planned works in progress. He ensures that all safety measures have been implemented (fire hoses and nozzles deployed, fire extinguishers nearby in case of fire, protection of personnel, specific measures for divers, etc). Refer to **PREVENTION MANUAL**.

**d) Drainage**

The Officer of the Watch will follow instructions from the Master, the Chief Mate and those shown in Card Cargo-702 "Bilge pumping" in this manual.

## **3. Pollution prevention**

<b>EXERCISES</b>
<b>Officer in charge of deck watch</b>

The officer on duty will ensure that bunkering operations, lub oil bunkering or sludges discharge are complying with the engine procedures in order to prevent any pollution. He will display the lights and marks required by regulations and will organize frequent rounds of inspection on deck.

***In case of an actual or imminent pollution, the dispositions mentioned in the Ship Oil Pollution Emergency Plan (SOPEP) and the procedure Em'cy-110 "Oil pollution - Emergency Situations Manual" must come into force immediately.***

## 5. Communications

### a) Walkie-talkies

The Chief Mate, the Officer on duty and the Helmsman and the watchman (if crewmember) will remain in permanent contact by walkie-talkie while on duty. All communications will be carried out in the **Working Language**.

The Officer of the Watch will ensure that all walkie-talkie batteries are charged so as to make them available at all times.

### b) Mobile phone

- The mobile phone is a compulsory security equipment
- The mobile phone should be adapted to the ship's trade (bi-bands, tri-bands)
- This telephone must be switched on all the time.
- The mobile phone is under Master's responsibility
- A 24 hours watch must be organised for this telephone (security reasons)
- This telephone is only to be used for work related communications.

### c) VHF

If available in Ship's office, ensure a watch on appropriate Port Authorities channel for the Security.

## 6. Management of cargo handling operations

The Chief Officer is in charge and supervises cargo handling operations.

The Officer on duty is responsible for cargo operations during his watch, under Chief Officer's instructions.

### a) Monitoring cargo handling operations

In order to ensure continuous monitoring of operations the officer on duty gives the helmsman a copy of the cargo handling plans performed by the Chief Mate. The officer on duty will keep the Chief Officer informed of the progress of the cargo operations and will point out any discrepancy between actual situation and original plan.

### b) Departure time

The departure time is displayed on board near the gangway. The Chief engineer is informed accordingly.

Departure time is decided by the Master, or the Chief mate on advice of the agent.

### c) Cargo record Book

The Cargo record Book will be kept up to date according to Master and Chief Mate instructions and procedure "Cargo record book" Cargo-060.

### d) Container lashing

Containers **lashing** will be carried out according to the Chief Mate's directives and in conformity with the procedure "Lashing and securing" Cargo-070, the Securing Manual and the Lashing Manual.

### e) Container security

- refer to **Ship Security Plan (SSP)**



EXERCISES
Officer in charge of deck watch

**f) Hazardous goods management**

Hazardous goods will be handled in accordance with the Chief Officer's Instructions and the procedure "Hazardous cargo" Cargo-080 in this manual.

**g) Ballasting**

The officer on duty must be familiar with ballasting piping and with procedures "Ballasting operations" Cargo-701 and "Automatic control list system" Cargo-703.

- **Automatic Control List System**

The Automatic Control List System will be in operation when alongside. Care will be taken to avoid lack of balance between the heeling tanks. In this case, the duty Officer will re-establish the situation by using the ballast circuit in accordance with the Chief Officer's Instructions.

At the end of the commercial operations the Automatic Control List System will be stopped.

- **Ballasting / Deballasting operations**

Ballasting and deballasting operations will be handled in accordance with the Chief Officer's Instructions and the « **Water Ballast Management Plan** ».

In each port, the Duty Officer will follow up the ballasting and deballasting sequences establish by the Chief Mate depending on the loading/discharging operations as well as the Port Authorities permission.

**h) Reefer units' management**

The reefer units' management must be carried out according to lines instructions.

It is the responsibility of the ship:

- To check Plug /unplug in due time,
- To check that reefer plant is working properly,
- To check the temperature when loading (set point and actual value).

<b>EXERCISES</b>
<b>Lashing and securing</b>

### 1. References:

- **Cargo securing manual**

Reference instructions governing lashing and securing are given in the document "Cargo Securing Manual" signed by the Classification society and the Flag administration.

Copies of all lashing/securing methods will be held at the disposal of the duty Officer and AB and the stevedores.

### 2. Monitoring of Lashing / Securing

#### General

- Check that lashing is conducted correctly and in conformity with instructions.
- Do not wait until the personnel have left to inspect the lashing but make regular patrols and indicate on the plan when a bay is completely lashed. Note any negligence or abnormally and note any deficiency in lashing and inform the "Lashing Foreman".
- The duty officer will be on deck as often as possible except when he is requested for other duties (ballasting, ship safety, etc.).
- Advise the Chief Mate if lashing is not done correctly or in case of problems with the lashing equipment.

#### Lashing in holds

- Special vigilance is requested for "Russian stowage" in holds to make sure that cones are properly fitted.
- Make sure that maximum stack weight is not exceeded.
- Make sure that the height of the stack enables the hatch cover to be installed.

#### Lashing on deck

- When loading 40' instead of 20' make sure the lashing equipment is removed from the middle of the hatch cover.
- Lashing equipment to be stowed in proper location
- Check that appropriate equipment is used: (length of bar, type of twist-lock, etc.)
- Make sure that the containers are suitably stowed and properly seated on their four corners on the four deck twist-locks.
- Check that the twist-locks are properly locked.

#### Special lashing

- In case of special lashing for which a surveyor has been appointed, make sure that the Chief Mate has been informed of his presence.
- Out of gauge cargo : lashing is to be checked by the Chief Mate.

### 3. Inspection of lashing

#### Inspection by the crew

Inspection of lashing is the responsibility of the Chief Mate who can delegate this task to the Duty Officer. A lashing inspection sheet is established for each port which can be the loading plan per bay. On this sheet is to be indicated the bays which have been completed and found to be in conformity.

He will sign and note his name, date and the time.

At the end of the call this sheet will be filed in the Cargo Record Book.

#### Other inspections

In certain ports inspection of lashing may be carried out by third party (surveyors, stevedoring,

EXERCISES
Lashing and securing

Lashing, etc). A so called lashed certificate may be issued. In this case and after Master agreement the Chief mate may sign this document **“FOR RECEIT ONLY**, without prejudice to owner’s liability”.

#### 4. Management of equipment

The Chief Mate is responsible of the monitoring of lashing equipment.

##### Storage

- The personnel on duty will store the equipments in proper locations provided for this purpose.
- Bars must not be left in passage ways. They have to be stored in their normal storage location for the safety.
- Lashing equipment left on the tank top of empty holds or in cargo holds passage ways should be removed and stored in proper location.
- Lashing equip or any other obstructions that may be trapped under containers have to be removed
- Ship’s lashing equipment left ashore must be brought back on board.
- At the end of the commercial operations make sure that the flats of twist-locks receptacles (lashing bins) are put on board and note their location.

##### Damaged equipment

- All damaged equipment should be removed from use.
- This damaged equipment should be stored in such a location that they cannot be used by stevedores or crew.
- This equipment is disembarked or repaired according to makers’ specifications.

##### Lashing equipment Register

Lashing equipment register consists in:

- The description and purpose of the equipment (sea Cargo Securing Manual)
- Grant, type and approvals
- Inventories:  
An inventory of the equipment is carried out periodically and filed in the lashing register.
- Inspections and maintenance (refer to makers’ sheet in cargo security manual)
- Orders and deliveries for the material.
- Approval certificates of the Classification society in case of an ACA shape.

##### Orders / Deliveries

- Orders and deliveries for the material are made according to the Company procedures.
- On delivery of lashing equipments make sure that the equipment matches with the approved type. If not, advise the Purchasing Department.
- Approval certificates must be filed in lashing equipment register.

EXERCISES
Cargo handling

## 1. Responsibility

The Chief Mate is responsible for the cargo handling operations. He will notify the Master of any problems.

## 2. Loading plan

Before the beginning of cargo operations, the Chief Mate will check the loading plan issued by the Shipplanner and the stevedore, in particular the points described below. In case of problems, he advises the Shipplanner to perform an updated plan.

He gives a copy of this loading and discharging plan to the duty officer and the Helmsman on duty.

He checks the correct execution of the loading plan.

The Chief Mate can decide, after master's advice, to modify the loading plan to respect criteria for regulations and the safety of the ship.

## 3. Conditions to be checked

The Chief Mate must at least check the points listed below. For this purpose, he uses the loading calculator which gives the various permissible limits. The version of the software used must be approved by the Classification Society. The Chief Mate will also use the following regulation documents which inform him on the loading limits:

- Trim and Stability booklet,
- Damage stability booklet
- And the Cargo Securing manual.

### Ship's drafts

The freeboard must not be less than the minimum freeboard authorised by the Freeboard Certificate and the loading line in accordance with the season and the navigational area.

The ship's draft and the trim must also be compatible in regards of safety during the voyage: limited draft in some ports, minimum draft to be respected for the structure of ships, minimum immersion of propeller or thruster, ...

### Stability calculations

The stability module is not less than the GoMs minimum required in all situations.

### Hull Stresses

The hull stresses (Bending moment, Torsional torque, shearing forces) must be less than the authorised limits throughout the entire voyage.

### Maximum permissible load per stack (Stack weight) and weight distribution

The maximum permissible loads per stack as well as the weight distribution limits per stack must not be exceeded.

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### Visibility

The visibility distance from the bridge must be less than the regulation minimum distance.

Ensure that navigation lights are visible in accordance with regulations, if necessary.

### Stowage

The stowage of containers must be suitable for seagoing.

EXERCISES
Cargo handling

#### 4. Loading report

On completion of Cargo Operations and after reading effective drafts, the Chief Mate prints out the loading conditions at departure using the Loading Calculator.

This will give all information concerning: ship's draft, stability module, hull stresses, displacement, deadweight, as well as the ballasts and loading summary.

These summaries are displayed on the bridge at the disposal of the Master and the Officers and are filled in the ship's Situation Binder (refer to filing system).

A ballasting planning (especially for ocean navigation) will be issued by the Chief mate, in order to ensure that the hull stresses are less than the authorised limits throughout the entire voyage.

#### 5. Test conditions check

The Chief Mate shall verify regularly (and at least every voyage), the validity of results given by the loading calculator to compare with the tests conditions issued by the Classification society.

He will record this test in the planned maintenance software and will file the record sheet in the binder for departure conditions (refer to filing system).

<b>EXERCISES</b>
<b>Use of the reefer monitoring system</b>

**USE OF THE YORK REFRIGERATION SYSTEM**

1. INSERT FLOPPY DISK WITH .EDI FILE
2. LEFT MOUSE CLICK ON THE PLANNING ICON
3. LEFT MOUSE CLICK ON READ/LOAD DATA FILE
4. LEFT MOUSE CLICK ON "ACTIVATE"
5. LEFT MOUSE CLICK ON "ACTIVATE & QUIT"

**ALL REEFER UNITS WILL BE DISPLAYED.**

EXERCISES
Reefer procedure onboard shipment

1. **THIS SHIP IS NOT DESIGNED TO CARRY REEFER UNITS IN THE HOLDS.**
2. **THERE ARE 700 CONNECTIONS ON DECK, ALL REEFER POINTS ARE INCLUDED IN CARGO PROGRAM "EASEACON" AND ARE BOLD OUTLINED ON BAY PLAN.**

AGENT OR TERMINAL REEFER TECHNICIAN HAS TO PROVIDE THE LIST OF REEFERS TO BE LOADED CONTAINING THE FOLLOWING INFORMATION:

- CONTAINER NUMBER
- PORT OF DISCHARGE
- BILL OF LADING NUMBER
- SPECIFIC INSTRUCTIONS IN MAINTAINING CARRYING TEMPERATURE
- COMMODITY

**OOW DUTIES ARE:**

- ENGINEER ON DUTY HAS BEEN ADVISED PRIOR EMBARKING THE FIRST BOX TO START ANOTHER GENERATOR IF NEEDED.
- EXTERNAL CONDITION OF THE CONTAINER IS WITHOUT DAMAGES.
- UNITS ARE STOWED IN PROPER PLACE AS PER LOADING PLAN APPROVED BY CHIEF OFFICER, KEEPING IN MIND POSITION OF CONNECTING PLUGS ON BOARD.
- TEMPERATURE SET POINT MATCHES WITH THE ONE INDICATED IN MANIFEST.  
**IMPORTANT!!! TAKE GOOD CARE NOT TO MIX SETTING TEMPERATURES IN CASES WHEN LOADING RF CONTAINERS WITH THE SAME TEMPERATURE BUT ON THE OPPOSITE SIDE OF THE SCALE (I.E ONE CONT. WITH +18 C AND THE OTHER WITH -18 C). DOUBLE CHECK WITH THE CM IN SUCH CASES.**
- TEMPERATURE RECORD CHART ATTACHED TO CONTAINER DOESN'T SHOW ANY STRANGE RUNNING DURING THE DAYS BEFORE RECEPTION ON THIS VESSEL.
- REEFER IS PROPERLY PLUGGED ON BOARD.
- REEFER IS NORMALLY RUNNING AFTER BEING PLUGGED ONBOARD
- SHIPS'ELECTRICIAN SHOULD BE INFORMED OF ANY ALARM OR MALFUNCTIONED OF ANY REEFER LOADED ON BOARD, LIKEWISE SHORE TECHNICIAN MUST BE REQUESTED TO CHECK MALFUNCTIONING REEFERS

**ELECTRICIAN DUTIES ARE:**

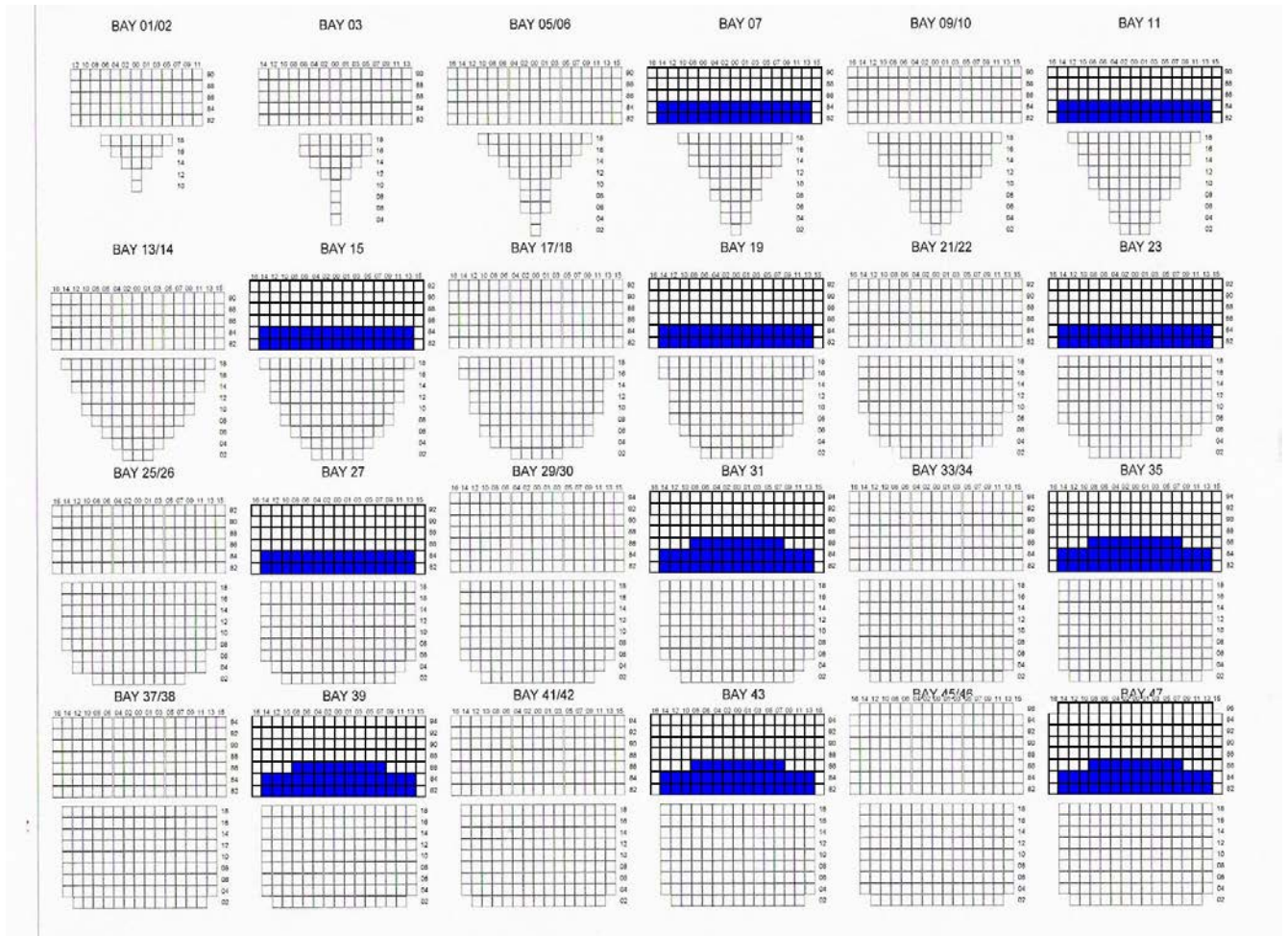
- MUST CHECK ALL RF UNITS LOADED THAT PORT BEFORE DEPARTURE
- DURING TRANSPORT REEFER TEMPERATURE SHOULD BE CHECKED AT LEAST TWICE A DAY IF WEATHER PERMITS AND TEMPERATURE RECORDED IN DAILY TEMPERATURE LOG.

**INFORM CHIEF OFFICER IMMEDIATELY IN CASE OF ANY DOUBT REGARDING ABOVE.**

## EXERCISES

### Reefer procedure onboard shipment

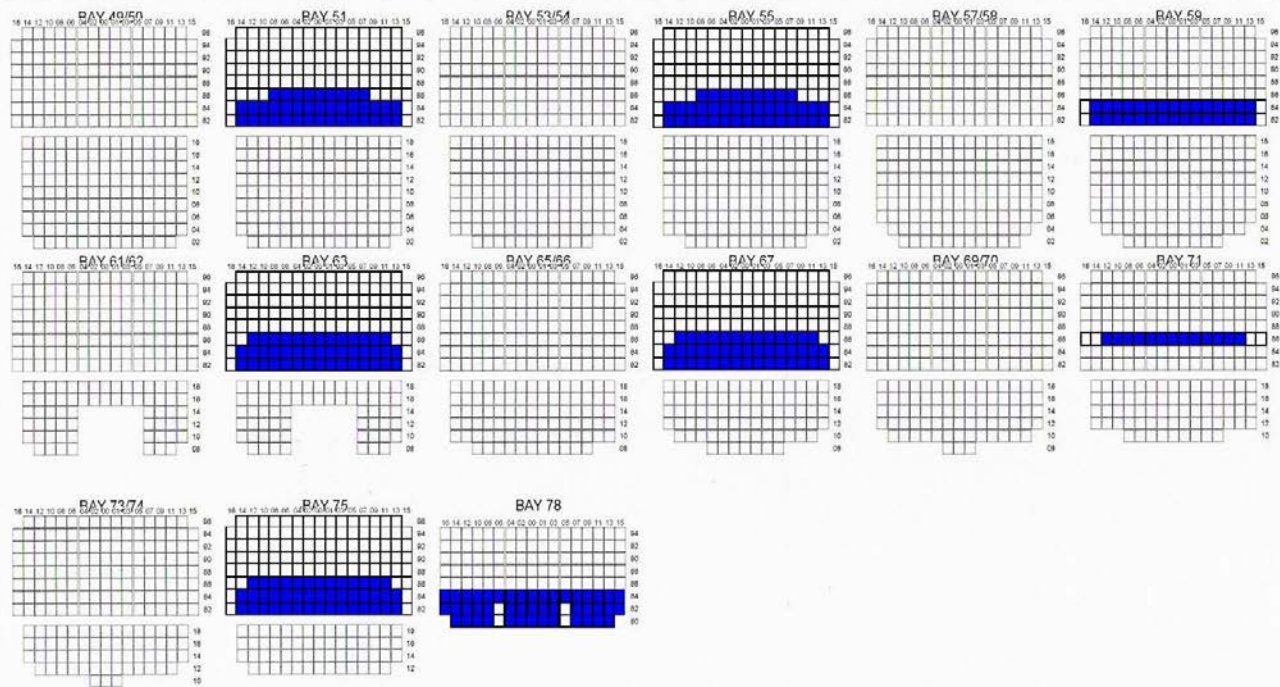
## REEFER SLOTS





## EXERCISES

### Reefer procedure onboard shipment



EXERCISES
Lashing practices

#### Reference:

*Reference instructions governing lashing and securing are given in the document “Cargo Securing Manual” signed by the classification society and the flag administration.* This manual will be held at the disposal of the Duty Officer and of the Ratings on deck. Copies of this manual must be at the stevedores/lashers disposal.

***Prior loading required lashing pattern to be agreed with lashing supervisor or foreman.***

#### MONITORING LASHING/SECURING

##### General

- Check that lashing is conducted correctly and in conformity with instructions.
- Do not wait until the stevedores have left the bay to inspect the lashing but make regular rounds and indicate on the plan when a bay is completely filled. ***Also fill up & sign lashing inspection sheet.*** Note any negligence or anomaly and report them to the “Lashing Foreman”.
- ***Since there is often a large number of traveling cranes working on the ship, the duty officer will be on deck as often as possible apart from management of ballasting operations and of ship safety.***
- ***Advise the Chief Mate if lashing is not done correctly or in case of problems with the lashing equipment.***

##### Lashing in holds

- Special vigilance must be used to ensure observance of lashing in holds concerning “Russian stowage” to make sure that all the lockable stacking cones are indeed installed correctly and only where they should be installed.
- Make sure that the maximum number of 20’ per stack in the holds is not exceeded.
- ***Make sure that the height of the stack enables the hatch cover to be closed.***

##### Lashing on deck

- Check that appropriate equipment is used.
- ***Make sure to check that the containers are suitably installed on the four base twist-locks before the traveling crane changes to another bay.***
- ***Check that the twist-locks on the deck or the hatch covers are suitably locked.***

##### Special lashing

- In the case of special lashing for which an expert (surveyor) has been designated, make sure that the Chief Mate is informed of his presence.
- ***Goods with excess dimensions which are loaded flat (OOG) will only be accepted after the Chief Mate has checked the lashing.***

#### INSPECTING LASHING

##### Inspection by the crew

Inspection of lashing is Chief Mate’s responsibility who can delegate this task to the Duty Officer. ***A lashing inspection sheet is established for each port.*** On this sheet crewmember will indicate the bays which have been completed and found to be in conformity. ***He will sign and note his name, date and the time.*** At the end of the period in the port this sheet will be filed in the lashing registration binder.

##### Inspection by land personnel

In certain ports, the handling company will carry out its own inspection and will present to the crew a ***“Lashing Certificate”.*** ***ONLY Chief Mate is permitted to sign it (with “FOR RECEIPT ONLY” remark).***

#### MANAGEMENT OF EQUIPMENT

The Chief Mate is responsible for monitoring lashing equipment.

##### Storage

- The personnel on watch will store the equipment in the locations provided for this purpose. The turnbuckles on the bridges must be put on hooks when they are not used.
- ***Unused bars must not be left in places where people are walking, since they constitute a danger in that case. It is compulsory to store them in their normal storage location.***
- Ensure that no any lashing material is on hatch coaming prior closing of hatch cover.
- ***Before starting to load deck cargo remove or have personnel remove all the lashing equipment which could be trapped under containers.***
- ***Finally, walk around the quay and bring any equipment which is left on quay back on board.***
- ***At the end of the commercial operations make sure that the flats of twist-locks receptacles are put on board and note their location.***

EXERCISES
Lashing practices

#### Unusable equipment

- **Move aside any equipment which is broken or not in conformity, with stuck twist-locks, twisted turnbuckles or bars, etc.**
- Put this equipment in the location provided for that purpose.

### **LASHING PRACTICES FOR “GERMAN LASHING”**

#### **Type of lashing in use on board:**

1. Bottom Twist locks T-2.2 between bottom tier and ISO socket
2. Semi - Automatic Twist lock T- 2.3C between all tiers on deck
3. Fully automatic twist lock TL-FA and TL-FA/SF for 53 feet cont
4. Lockable stacking cone in cargo hold
5. For any further lashing details and container weight distribution refer to Chapter 4 of the Cargo Securing Manual.

**In general for 40’ containers** all Rows on second and third tier on Deck to be secured with short bars (forward and aft lashing bridge). At sea sides one additional long bar to be lashed.

**In case of 20’ containers on lashing bridges** (END) the same procedure as per 40’ containers but GAP all rows second tier with cross single short bars and all rows third tier with cross long bars. At sea side one additional long bar.

**There are two types of Turnbuckles:** TB-3 and TB-3+230. Their proper use explained in detail in German Lashing Cargo Securing Manual (Drawing HB-0303-AA-006).

**Lockable Stacking Cone S-1.47** must to be used for 20ft cont in cargo hold, **but only 2 per each cont.**

**Lashing foreman to be instructed of proper use of Semi - Automatic Lock T- 2.3 as per operation instruction.**

**For 53 feet containers loading check ADDENDUM TO CSM.** There are two type of fully automatic twist lock, TL-FA, and TL-FA/SF. Fully automatic twist lock TL-FA/SF on the side where is a gap between rows 05 - 03 and 06 – 04 and fully automatic twist locks TL-FA on the other side where there are no gaps.

**DURING SEA PASSAGES LASHING OF DECK CARGO TO BE CHECKED ON DAILY BASIS AND RECORDED IN THE DECK LOG BOOK.**

## EXERCISES

### Ballasting operations – Piping - Pumps

Date and author ID for any amendment	Text and drawings
	<p><b><u>BALLASTING</u></b></p> <p>FILLING DOUBLE BOTTOM TANKS IS DONE BY GRAVITY. IN CASE OF EMERGENCY OR EXCEPTIONAL CIRCUMSTANCES THE PUMPS CAN BE USED ON CONDITION THAT CONTINUOUS MONITORING OF BALLASTING IS CARRIED OUT. IN THIS CASE FINISHING THE FILLING (AS FROM 80%) WILL BE DONE ONLY BY GRAVITY. THE REDUCED SIZE OF THE AIR SPACES IN THESE ENCLOSURES CAN, IN FACT, LEAD TO THE MOST SERIOUS CONSEQUENCES DUE TO THE DOUBLE BOTTOM BEING SUBJECT TO PRESSURE.</p> <p>COMPANY RECOMMENDATION IS TO BALLAST D.B.TANKS BY THE GRAVITY ONLY.</p> <p><b><u>BALLASTING WATER BALLAST TANKS BY “GRAVITY”</u></b></p> <p><b><u>BALLASTING BY GRAVITY USING BALLAST MAIN LINE <i>PORT</i> SIDE :</u></b></p> <ol style="list-style-type: none"><li>1. MAIN SW LINE PORT SIDE (ALLWAYS OPEN)</li><li>2. OPEN “BA 41”</li><li>3. OPEN “BA 43”</li><li>4. OPEN DEDICATED TANK VALVE</li></ol> <p><b><u>BALASTING BY GRAVITY USING BALLAST MAIN LINE <i>STARBOARD</i> SIDE</u></b></p> <ol style="list-style-type: none"><li>1. MAIN SW WATER LINE STARBOARD SIDE (ALLWAYS OPEN)</li><li>2. OPEN “BA 40”</li><li>3. OPEN “BA 42”</li><li>4. OPEN DEDICATED TANK VALVE</li></ol> <p><b><u>BALLASTING &amp; DE-BALLASTING OPERATIONS WITH BALLAST P/P &amp; BALLAST AND BILGE P/P</u></b></p> <p><b><u><i>PUMP IN BALLAST</i> USING BALLAST MAIN LINE <i>PORT</i> SIDE</u></b></p> <ol style="list-style-type: none"><li>1. MAIN SW LINE PORT SIDE (ALLWAYS OPEN)</li><li>2. OPEN VALVE “BA-41”</li><li>3. OPEN VALVE “BA 47”</li><li>4. OPEN DEDICATED TANK VALVE</li><li>5. OPEN THE “DISCHARGE” VALVE “BA 45” GRADUALLY</li><li>6. START BALLAST &amp; BILGE P/P</li></ol> <p><b><u><i>PUMP IN BALLAST</i> USING BALLAST MAIN LINE <i>STARBOARD</i> SIDE</u></b></p> <ol style="list-style-type: none"><li>1. MAIN SW LINE STARBOARD SIDE (ALLWAYS OPEN)</li><li>2. OPEN VALVE “BA 42”</li><li>3. OPEN VALVE “BA 46”</li><li>4. OPEN DEDICATED TANK VALVE</li><li>5. OPEN THE “DISCHARGE” VALVE “BA 44” GRADUALLY</li><li>6. START BALLAST P/P</li></ol> <p><b>THE VALVE IS OPEN WHEN THE VALVE INDICATION ICON IS FULLY GREEN</b></p>

## EXERCISES

### Ballasting operations – Piping - Pumps

#### DEBALLASTING (PUMP OUT) USING BALLAST MAIN LINE PORT SIDE

1. OPEN DEDICATED TANK VALVE
2. OPEN VALVE "BA-43"
3. OPEN VALVE "BA-48" OVERBOARD (NORMAL OPEN)
4. OPEN "DISCHARGE" VALVE "BA 45" GRADUALLY
5. START BALLAST & BILGE P/P

#### DEBALLASTING (PUMP OUT) USING BALLAST MAIN LINE STARBOARD SIDE

1. OPEN DEDICATED TANK VALVE
2. OPEN VALVE "BA 42"
3. OPEN VALVE "BA 48" OVERBOARD
4. OPEN "DISCHARGE" VALVE "BA 44" GRADUALLY
5. START BALLAST P/P

RECORD ALL BALLAST AND DEBALLAST OPERATION IN LOG BOOK AND KEEP THEM IN BALLAST WATER MANAGEMENT PLAN APPENDIX IV.

#### BALLAST PUMP OPERATION

*IN ORDER TO PREVENT ANY " WATER HAMMERING AND MIS-OPERATION FOLLOWING PROCEDURE MUST BE FOLOWING:*

1. REMOVE THE VACUUM /PRESSURE IN MAIN LINE IF ANY AND FILL THE LINE WITH WATER
2. OPEN THE DEDICATED TANK VALVES
3. OPEN THE CONCERNED VALVES AS NECESSARY"EXCEPT PUMP DISCHARGE"
4. START BALLAST PUMP
5. OPEN THE "DISCHARGE" VALVE GRADUALLY. OPEN ESPECIALLY SLOWLY FROM 10° TO 45°
6. WHEN STOPPING BALLASTING :
  - a) CLOSE THE "DISCHARGE" VALVE GRADUALLY
  - b) STOP BALLAST PUMP
  - c) CLOSE ALL CONCERNED VALVES

**NOTE : MORE THAN TWO (2) TANK VALVES TO BE OPENED WHILE ONE PUMP RUNNING IN FULL CAPACITY**

EXERCISES
Ballasting operations – Piping - Pumps


	<p><b><u>WATER BALLAST EXCHANGE</u></b></p> <p>THE 'EMPTY / REFILL METHOD' IS IN USE. THE 'EMPTY / REFILL METHOD' IS A PROCESS BY WHICH A BALLAST TANK INTENDED FOR THE CARRIAGE OF BALLAST WATER IS FIRST EMPTIED AND THEN REFILLED WITH REPLACEMENT BALLAST WATER TO ACHIEVE AT LEAST A 95 PER CENT VOLUMETRIC EXCHANGE.</p>

EXERCISES
Automatic control list system

Date and author ID for any amendment	Text and drawings
	<p style="text-align: center;"><u>ANTI – HEELING SYSTEM</u></p> <p>HEELING TANKS ARE No 4 SIDE WATER BALLAST TANK PORT &amp; STBD AND No 5 SIDE WATER BALLAST TANK PORT &amp; STBD</p> <p>UPPON ARRIVAL ALONGSIDE THE BERTH CHANGE SWITCH ON ANTI-HEELING PANEL FROM POSITION 2 (STABILITY) TO POSITION 1 (HEELING).</p> <p>TANK SELECTION SWITCH MAY BE USED IN THREE POSITIONS:  1 = TANK 1 (No 4 SWBT P/S ONLY)  2 = TANK 2 (No 5 SWBT P/S ONLY)  3 = TANK 1 + 2 (No 4 SWBT P/S + 5 SWBT P/S)</p> <p>MAKER: HOPPE BORDMESSTECHNIK</p> <p>MODE OF OPERATION WITH ANTI – HEELING SYSTEM IS AS FOLLOW:</p> <p>OFF  READY  INDIC  MAN  AUTO</p> <p>PRESS “MODE” BUTTON UNTIL “AUTO” MODE INDICATION IS LIT WITH GREEN LIGHT. AUTO MODE IS SET TO START WHEN SHIP LIST 1 DEGREE PORT OR STBD SIDE.</p> <p>TO OPERATE IT MANUALLY PRESS “MODE” BUTTON UNTIL “MAN” MODE INDICATION IS LIT WITH GREEN LIGHT.  FOR UPRIGHT SHIP MANUALLY BEFORE DEPARTURE YOU MUST PRESS BOTH BUTTONS (PORT &amp; STARBOARD) AT ONCE THAN PRES MODE BUTTON AND NOW PUMP WILL START AND WILL STOP AUTOMATICALLY WHEN THE VESSEL IS UPRIGHT.</p> <p>BEFORE DEPARTURE SWITCH OFF ANTI-HEELING PRESSING “MODE” BUTTTON TILL “OFF” AND “READY” POSITION LIT WITH GREEN LIGHT AND CHANGE SWITCH ON ANTI HEELING PANEL FROM POSITION 1 (HEELING) TO POSITION 2 (STABILITY).</p> <p>IN CASE OF EMERGENCY PRESS “EMERGENCY STOP” BUTTON (RED COLOUR).</p>

## EXERCISES

### Use of the mooring winches & safety on mooring stations

Date and author ID for any amendment	Text and drawings
	<p><i>This Card consists of 3 Chapters:</i></p> <p style="text-align: right;"><b>01. SAFE MOORING PRACTICES</b>  <b>02. UNSAFE/FORBIDDEN MOORING PRACTICES</b>  <b>03. MOORING ARRANGEMENTS</b></p> <p><b>VIVALDI</b></p> <p><b>- OFFICER IN CHARGE OF MOORING STATION IS RESPONSIBLE THAT MOORING EQUIPMENT IS USED ACCORDING TO MANUFACTURERS RECOMMENDATIONS AND SAFE MOORING PRACTICES ARE RESPECTED ALL THE TIME. IN CASE ANY OF MENTIONED AND BELOW STATED IS NOT IN COMPLIANCE HE SHOULD BRING IT TO THE CHIEF OFFICER / MASTER'S ATTENTION IMMEDIATELY</b></p> <p><b>- THIS GUIDE SHOULD BE PART OF EVERY DECK OFFICER/RATING'S "TRAINING AND FAMILIARIZATION BOOKLET" AND EXHIBITED AT FORWARD AND AFT MOORING STATION</b></p> <p style="text-align: center;"><b>01. SAFE MOORING PRACTICES</b></p> <ul style="list-style-type: none"> <li>➤ Mooring station working areas should be anti-slip</li> <li>➤ Wearing of full PPE compulsory</li> <li>➤ Ropes/Lines must be reeled in the right direction and manner on the winch drum.</li> </ul> <p>Band Brakes are designed for the rope to pull directly against the fixed (anchored) end. Reeling the rope in the wrong direction may reduce the brake holding power up to 50%. Brakes physical condition is vital – oil, moisture and heavy rust can seriously reduce its holding power. Regular maintenance and inspection required. Brake linkages must be free and greased, otherwise holding power reduced.</p> <p>Excessive turns should not be left on the working of a split mooring winch - <b>three turns (1 layer) are sufficient.</b></p> <div style="display: flex; align-items: center;"> <div style="text-align: right; margin-right: 10px;">side</div>  </div> <ul style="list-style-type: none"> <li>➤ Ropes and wires should be regularly inspected and maintained. Loose ones should be stowed under deck and the ones on the winch drums covered/protected during sea passage.</li> <li>➤ Turn on/try winches/windlasses well in advance, particularly if cold and/or coming to a port after long sea passage</li> <li>➤ Have enough heaving lines at hand at each mooring station (min 3)</li> <li>➤ Care should be exercised when throwing heaving lines ashore to avoid hitting people with the 'monkey's fist'.</li> <li>➤ In case there are several kind of ropes at the mooring station, try to have the same quality/kind to work in the same direction</li> </ul>

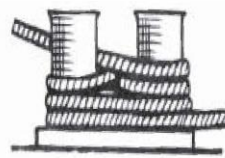
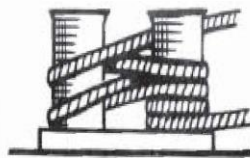


## EXERCISES

### Use of the mooring winches & safety on mooring stations

- Aft mooring station should watch out propeller when giving ropes ashore, especially the first one (should be of a floating type, if possible). Fwd station should watch out bow thruster. Master should advise aft station prior starting the engine.
- When alongside, personnel on duty should ensure that moorings are checked and tended at regular intervals and that remedial action is taken to minimize or eliminate damage to moorings. Actions should be taken to prevent chafing - ensuring that all rollers, deadmen, etc. are free to turn, wrapping canvas or old fire hose around a mooring line at potential chafing areas and, in extreme cases, applying grease or other approved lubricant to the line, again to reduce the effect of chafing.  
This is particularly relevant in tidal waters, high swell ports, in cases of strong wind blowing offshore and on vessels with high loading and discharging rates.

- **Large Diameter Bitts**      **Small Diameter Bitts**



When using synthetic ropes on large sets of bitts, use two round turns (no more) on the first post, then figure-eight round both. On smaller diameter bitts, the two

round turns should be around both posts.

***Especially when giving ship's rope to a tug.***

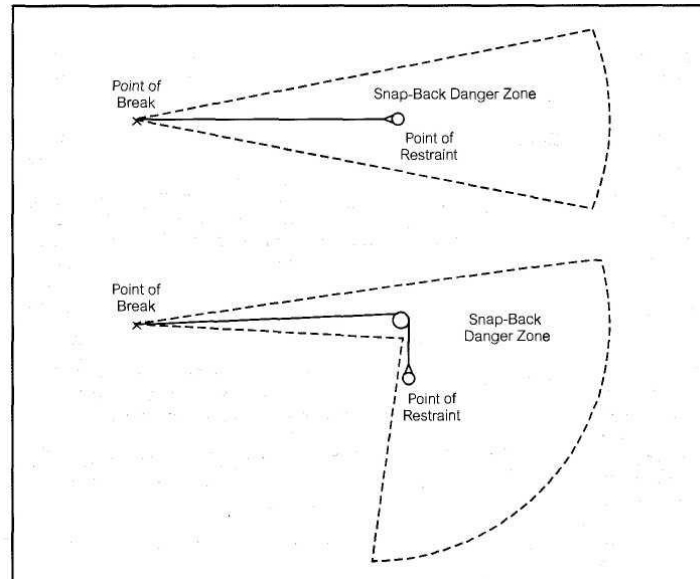
- If a rope has to be slackened down, the winch should be put into gear, the brake opened and rope walked back under power. ***It should never be slackened down by releasing the brake!*** This is uncontrolled and t4 not safe. If 2 ropes in the same direction have equal loads then the entire load will be suddenly transferred to the other rope which may part.
- OOW/duty Deck hands should make sure that winches engage/disengage lever's safety pins are always in place.
- Winch controls must be clearly marked always!
- ***At least Officer in charge of the mooring station and designated winch/windlass driver should be familiar with the winch Emergency switching off system/procedure.***
- ***Do not handle a rope on a drum end UNLESS a second person is available to assist you!***
- Do not stand too close to a winch drum when holding and tensioning a rope – if the rope surges you could be drawn into the drum. ***Stand back and grasp the rope about one meter from the drum.***
- ***Do not stand in the bight of rope***
- ***Keep on mind that brake's holding power is always greater then winch heaving power and once brake starts to slip (render) it is impossible to heave in unless the forces causing the slippage are reduced. In such circumstances never try to engage the winch and heave in the rope – it will never work! The only result will be bigger slip and possible pay out of the entire rope.***
- Winch brakes should have holding capacity of abt 60% of the ropes breaking

## EXERCISES

### Use of the mooring winches & safety on mooring stations

load—keep on mind when ordering a new rope.

#### ➤ **SNAPBACK**



Always keep on mind that rope can break and snapback, especially synthetic rope, when under the load/stress. **Treat every synthetic rope under load with extreme caution!**

Synthetic ropes normally break suddenly, without warning, without audible signs. Stand clear of potential path of snapback whenever possible. The potential

path of snapback extends to the sides and far beyond the ends of the tensioned rope. Broken rope will snapback beyond the point at which is secured, possibly to a distance almost as far as its own length. When it breaks behind the fairlead, the end of the line will fly around and beyond the fairlead. When have to pass near the rope under tension, do so as quickly as possible – ship is almost always moving about the ropes, time your passage near the rope when it is under little or no tension. Do not leave loose objects in the rope handling area – if rope breaks it may throw it around as it snaps back.

- If it appears that ropes are coming under excessive strain the load should be reduced.
- Prior start turning the ship on the spring, Officer in charge of that particular station must heave it up tight, report it to the Bridge and keep it that way until ordered to release it.
- Communications between bridge and maneuverings deck must be clear and reliable.
- Additional (“BACK-UP”) communication must be clear and reliable.
- During approaching to a berth and berthing, Officer in charge of the mooring station should report immediately to the Master eventual existing/former damages to berth/jetty/fenders, whilst Pilot is still on the Bridge.
- **Regular training courses on how to use mooring equipment / various mooring situations / unsafe mooring practices , at least every 3 months and/or on every occasion when Officer in Charge of mooring station/Bosun is relieved, should be carried out**

#### **Gangway**

- Consult the tidal table displayed in the Deck Office/Gangway
- Advise the Officer in case of any problems
- Pay careful attention to the gangway during gantry cranes passing

## EXERCISES

### Use of the mooring winches & safety on mooring stations

- Lift up the gangway during the night, if there are no cargo operations

#### 02. UNSAFE/FORBIDDEN MOORING PRACTICES

**Mooring station is a high risk working environment! Unauthorized / untrained personnel must not be permitted to wander around mooring stations unsupervised.**



The orange line shows the wrong arrangement of the rope while heaving up. **It should never be attempted to heave up the rope this way!!!** The rope must always work against the roller and roller must move freely (well greased).



The effectiveness and safety of the moorings is dependent upon the configuration of the mooring lines. Officer in charge should be familiar with configuration of the moorings, so **that leads are effective and do not create sharp angles.**

Proper moorings arrangements for the fwd and aft stations are shown in the Chapter 03. Mooring Arrangements - should always be utilized taking into account shore side facilities.



**To prevent unnecessary dangers to ships personnel, and to prevent expensive mooring line damage, moorings should not be crossed over each other or be allowed to chafe against sharp objects.**

**Officer in charge should never allow moorings/ropes arrangements shown on the left to happen!**

Consideration should also be given to the order in which lines are deployed, so as to maintain a safe

working environment at all times.

## EXERCISES

### Use of the mooring winches & safety on mooring stations



**Mooring lines should not be left on drum-ends** - these are designed for warping, not holding the weight of a ship for long periods and there is a risk of lines slipping or being thrown off drum ends when used in this manner.



**Riding turns (where a rope is buried under lower turns on a winch)** cause would for letting heaving back

**must be avoided.** If unnoticed, this can problems for mooring gangs as the line initially pay out when slacking it back go, but would then suddenly start in (the winch would still be turning as if to slack back the line). This could lead to a potentially

dangerous situation for anyone on the quay trying to remove the line from a bollard.

### 03. MOORING ARRANGEMENTS

#### COMBINED ANCHOR MOORING WINCH "BROHL" OPERATION:

Prior starting-up, check the following:

1. Rope in proper condition?
2. Rope end fastening in proper condition?
3. Gear oil level correct (oil level between min. and max. mark of oil dip stick)?
4. Lubrication points serviced?
5. Spindle band brakes (drum – cable lifter) functioning (check thickness of brake lining)?
6. Claw clutch functioning?
7. Air gap between motor brakes within the allowance (see nameplate)?
8. Terminals at motor, master switch and load monitoring etc. o.k.?
9. Electrical operating instructions followed-up?

#### **FAULT INDICATIONS:**

In case of a failure the red lamp in the active control column will give different signals depending on the failure cause:

<b>Continuous signal: PLC failure</b>	<b>Fast blinking signal:</b>
<b>Overload/too much pull</b>	
<b>Slow blinking signal: Over-temperature motor</b>	<b>2 flashes --- short</b>
<b>break: Over-current motor</b>	
<b>3 flashes --- short break: Rope break</b>	<b>4 flashes ---</b>
<b>short break: Failure automatic mode</b>	
<b>5 flashes --- short break: Failure break</b>	<b>6 flashes --- short</b>
<b>break: Cable break load sensor</b>	
<b>7 flashes --- short break: Load signal out of range</b>	<b>8 flashes --- short</b>

## EXERCISES

### Use of the mooring winches & safety on mooring stations

#### **break: Emergency stop**

**PLC failure:** this failure will cause an automatic shut down. **Neither manual nor automatic operation is possible.**

**Overload/too much rope pull:** the load sensor measure a value above permitted limit.

**Only lowering in manual ops possible.**

**Over-temperature motor:** this failure will cause an automatic shut down. **Neither manual nor auto, until motor is cooled down.**

**Over-current motor:** if the motor is operated for longer then 3 secs with max possible current (=short circuit current), it will be automatically stopped. **This over-current protection is only active for the anchor operation.**

**Rope break: at sudden load reduction under 15% rope pull in automatic mode, the control system will cause an automatic shut down after 15 secs.**

**Failure automatic mode:** if the control system is not able to operate the winch according to the pre-selected values in automatic mode, **operation will be stopped after 15 secs.**

**Failure break:** this failure will cause an automatic shut down. **Neither manual nor automatic operation is possible.**

**Cable break load sensor:** control system expects a no-load signal of 4 mA from RSG amplifier. In case of lowering signal on the load measuring input, only manual operation is possible – **3<sup>rd</sup> step is blocked.**

**Load signal out of range:** RSG amplifier gives a load signal of more then 20 mA to control system. **Only manual lowering psbl.**

#### **MOORING OPERATION:**

**The operation mode – hand – or automatic operation – is preset at the control stand.**

In automatic mode 5 load steps are available, 20-40-40-80-100%, dependant on the nominal pulling force.

#### **MANUAL:**

1. Prior start, control lever needs to be in zero position and all emergency switches pulled out.
2. Vessel supply system "ON"
3. Set the switch in 'MANUAL MODE'.
4. At the gearbox of combined anchor and mooring winches the **crank is to be put in the mooring position, if necessary use the turn buttons on gearbox. If overloaded, hoisting buttons and hoisting is blocked.**
5. Direction of rotation as well as the speed is selected by the control lever. According to the actual load condition the speed may automatically be reduced and the 3<sup>rd</sup> speed is blocked & released.
6. For shut down, put control lever in zero position and turn selector switch to 'OFF'.

#### **SELF TENSIONING (AUTOMATIC):**

**When shifting to automatic operation with slack rope or with a load below 15% of nominal load, cable pull to be adjusted to minimum 15% by starting the winch in**



## EXERCISES

### Use of the mooring winches & safety on mooring stations

***“hoisting” mode, e.g. until the driving motor stops automatically.***

***Mooring operation SHOULD not be done IN automatic MODE!***

1. The gearbox of combined anchor and mooring winches must already be switched to mooring operation, if necessary proceed as described under manual operation.
2. Prior start, control lever needs to be in zero position and all emergency switches pulled out.
3. Set selector switch to the desired rope pull value. If rope pull is too low (15%) at the beginning tighten the rope manually by using the control lever. Lamp should give steady signal when control system has accepted automatic mode. ***At this stage control lever is without function.***
4. For shut down turn selector switch to ‘OFF’ position.

#### SELF TENSIONING WITH 1 ROPE DRUM

***Generally a proper automatic operation of double drum winches is only possible on one rope drum.*** The second rope drum to be disengaged and fixed by means of spindle band brake. Then the rope guided on shore by the 2<sup>nd</sup> rope has no influence on the automatic operation. The rope drum intended for the automatic operation can be freely selected by the crew dependant on the condition on board.

#### SELF TENSIONING WITH 2 ROPE DRUMS

Automatic operation with two drums at the same time (both rope drums engaged) is generally possible. Summing-up of forces of both rope drums in the measuring device leads to an indefinite condition. The automatic system cannot analyze the load capacity on any rope drum. ***This can cause multiplied shifting operations in the automatic system, what leads to increased wear of switch contacts – DO NOT OPERATE IN THIS MODE!!!***

#### ANCHOR OPERATION

***Anchor operation is carried out at the control stand in operation mode “Hand”.*** Master switch with following functions:

- STEP I Nominal pulling force with slow speed.  
STEP II Nominal pulling force with nominal speed/Anchor break-off.  
STEP III Interlocked during anchor operation.

1. Prior start, control lever needs to be in zero position and all emergency switches pulled out.
2. Vessel supply system “ON”
3. Set the switch in ‘MANUAL MODE’.
4. At the gearbox combined anchor and mooring winches the ***crank is to be put in the anchor position.*** If necessary use the turn buttons on the gearbox. ***If overloaded, hoisting buttons and hoisting is blocked.***
5. Direction of rotation as well as the speed is selected by the control lever. ***The 3<sup>rd</sup> speed step is blocked for anchor operation. The chain length is indicated at the control column.***
6. ***Approx. 5m before reaching the hawse pipe the speed is automatically reduced to the 1<sup>st</sup> speed step. This function may be deactivated by pressing the BYPASS button on the switch cabinet (bypass is***

## EXERCISES

### Use of the mooring winches & safety on mooring stations

*active for 30min.) and then is automatically reset. **BYPASS MODE SHOULD NOT BE USED IN NORMAL CIRCUMSTANCES!!!***

7. When anchor is pulled in ALL THE WAY, chain length indication may be manually put to zero by pushing "RESET" button on the switch cabinet.

8. For shut down put control lever in zero position and turn selector switch to "OFF".

ANCHOR LOWERING BY THE MOTOR POWER (ENGAGED):

- engage cable lifter
- release cable lifter brake
- release chain stopper

***Shifting of claw clutch at cable lifter must not be carried out under the load. Winch to be relieved of load and fixed by spindle band brake. Claw clutch may only be shifted in stand-still condition.*** The claw clutch is arranged on the countershaft in the gearing.

ENGAGING:

***In case when coupling is not locked when operating the coupling lever because the claws are not in correct coupling position, then the coupling to be brought in the correct position by "inching" the motor at turn button.***

When the correct coupling position is reached, the coupling can be shifted in stand still and unloaded condition to its end position. ***The safety pin of the operation lever locks automatically under spring pressure.***

***After finished engagement the cable lifter brake and the lashing device of anchor at chain stopper to be released.***

ANCHOR DROPPING (DISENGAGED):

- draw anchor out of the hawse pipe by the motor power
- lock cable lifter brake
- disengage cable lifter
- control dropping of anchor by smooth releasing resp. locking of cable lifter brake

***Dropping of anchor only in 2<sup>nd</sup> motor step.***

HOISTING AND MAKING ANCHOR "READY FOR SEA":

***The hoisting procedure is carried out by motor power with cable lifter engaged, band brake released and chain stopper unlocked.***

***The pulling force of the anchor winch in hoisting operation resp. anchor dropping operation is indicated at the control stand by means of an analogue instrument.***

***After anchor is drawn-in the hawse, shift directly to ZERO to avoid any overload of the motor.***

***The anchor to be drawn-in the hawse pipe only in the 1<sup>st</sup> motor step.***

For safety purpose a gear limit switch is shifting down the motor to motor step 1 (approx. 5m in front of the hawse). After the anchor is positioned in the hawse pipe it can be properly secured by means of the existing lashing device.

ANCHOR STOPPER OPERATION:

***The roller chain stopper is provided to fix the chain when the vessel is anchored.*** For this purpose a pair of stoppers (5) is gripping between two chain links and the framing (1) in horizontal position. The roller chain stopper consists of a framing (1) with integrated sidely guideways, swivelling pair of stoppers (5) and a guiding pulley (9). The design of the

## EXERCISES

### Use of the mooring winches & safety on mooring stations

stopper allows for an easy adjustment to the existing deck's inclination.

**Offshore anchorage:** Lowering of anchor by motor power resp. free letting-go of anchor only allowed with pair of stoppers (5) in released condition. The released pair of stoppers (5) to be secured by means of the locking bolt (2). After finished lowering of anchor the pair of stoppers (5) is positioned on the anchor chain by releasing the locking bolt (2). For interlocking purpose the anchor chain must be lowered by motor power until the pair of stoppers (5) – by its self-weight -is positioned in front of the chain – position interlocked. Now the roller chain stopper accommodates the loads on the chain and the winch is unloaded. The **anchor brake must be closed and the coupling of the chain pulley to be disengaged**.

**Hoisting and making anchor "ready for sea":** The pair of stoppers (5) to be released. For releasing purpose the chain must be tensioned by the winch. The released pair of stoppers to be secured by means of the locking bolt (2). The anchor is lifted by motor power. **The insertion of the anchor in the hawse should be effected in the smallest motor step.** The **cable lifter brake is closed and the anchor is lashed by means of the lashing device of the chain stopper**. For safety purpose the pair of stoppers (5) is then positioned on the anchor chain by releasing the locking bolt (2). In case of sliding down of anchor the claws of the pair of stoppers (5) are by its self –weight positioned in front of the chain link and block the chain.

**Lashing of anchor:** The **pair of stoppers (5) of the roller chain stopper MAY NEVER BE USED for lashing the anchor!**

Mechanically resp. hydraulically operated lashing devices are arranged at the external side of the stopper framing. The mechanically operated lashing device is provided with turnbuckles.



## EXERCISES

### Use of the mooring winches & safety on mooring stations

