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Issued By: HSSEQ Manager & DPA	Shipboard Organization	Date Issued: Feb 2021
Approved By: Head of Fleet	Doc No: RTG-IMS-FLI- T&B -001	Pages: 1 of 17


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RECORD OF AMENDMENT

Date of Revision	Section	Brief Description of Amendments	Rev. No.

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1. Shipboard Organization

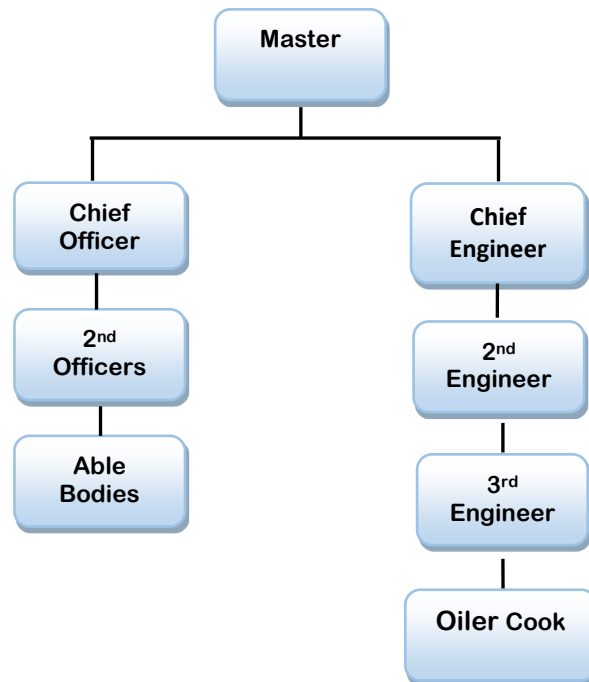
1.1 Roles and Responsibility

Roles and responsibilities have been established by RTG (Rocktree Group) for the Master, the Senior Officers Staff as well as for all shipboard personnel which are involved (directly or indirectly) to the implementation of the Integrated Management System. Specific tasks are assigned to skilled and qualified personnel.

1.2 Organization and Hierarchy


The following flow-chart describes the on-board organization.

Figure 1 – On-board Organization Chart



1.2.1 Master

In matters of safety and pollution prevention, the Master has the **overriding authority** and responsibility to make immediate decisions or actions at sea which he considers to be in the best interests of the safety of the crew, ship and the marine environment even if the decisions are in conflict with the prescription of these procedures. **The overriding authority applies to all circumstances.**

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The Master has the responsibility for, inter alia:

- Implementing the HSSEQ policy of RTG;
- Motivating and ensuring observation by the crew in the execution of that policy;
- Issuing appropriate orders and instructions in a clear and simple manner;
- Reviewing the safety and pollution prevention system and reporting deficiencies and feedback to shore based management (e.g. Master Reviews);
- Effective communication with the DPA and all parties onboard and ashore;
- Verification that all shipboard requirements of the safety system are met;


The authority of the Master includes, inter alia:

- To reject or replace personnel he considers being unsuitable or unfit for duty;
- To refuse any tug or Barge or OGV mooring arrangement he considers being hazardous to his ship or its crew;
- To agree to Lloyd's Open Form regarding the safety of the ship, its crew and the protection of the environment; and
- To refuse to leave port or berth if he considers the vessel to be in an unsafe condition.

On appointment to command, a Master will ensure that: -

- Before leaving berth, the seaworthiness of the vessel is intact
- The vessel is properly manned, equipped & supplied
- All documents and certificates pertaining to the vessel's condition are valid. Any documents held by the previous Master have been fully accounted for and that a receipt is issued for are the same.
- The first available opportunity is taken to become completely familiar with all details of the vessel's construction and general equipment and to understand the vessel's capabilities and limitations


“In matters of safety and pollution prevention, the Master has the overriding authority and responsibility to make immediate decisions or actions at sea which he considers to be in the best interests of the safety of the crew, ship and the marine environment even if the decisions are in conflict with the prescription of these procedures. The overriding authority applies to all circumstances.”

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1.2.2 Roles and Responsibilities of Shipboard Personnel

Table 1

Responsibilities and Duties	Master	Chief Officer	Deck Officer	Chief Engineer	2 nd Engineer	Engine Officer	Oiler	AB
Overriding authority and responsibility to make immediate decisions or actions to save the human life and prevent pollution	Green							
Implementation of the Company Safety, Environmental and Quality Policy	Green	Green	Green	Green	Green	Green	Yellow	Yellow
Motivating and ensuring observation of the Policies, Procedures and Instructions	Green							
Reviewing the Management Safety and report feedback, deficiencies and non-conformity to RLPL (Master Review)	Green	Yellow	Yellow	Yellow	Yellow	Yellow		
Ensure effective communication with Shore-based staff, Including the DPA	Green	Yellow		Yellow				
Issuing standing orders for the concerned department	Green			Green				
Reporting to RLPL Non-Conformities, Breakdowns, Accidents and Hazardous Occurrences and take appropriate corrective/preventive actions	Green	Yellow		Yellow				
Overall responsible for safe of navigation, mooring, cargo handling and all other shipboard operations.	Green							
Upkeep all records required for the implementation of the Management System	Green	Green	Green	Green	Green	Green		
Ensuring that all documents/logs required by Port Authorities and Flag Administration are completed	Green	Yellow	Yellow	Green	Yellow	Yellow		
Liaise with Flag State, Port State Authorities, P&I, Classification Society when required	Green	Yellow		Yellow				
Ensure that mooring arrangements are safe	Green	Yellow	Yellow					Yellow
Sign the Lloyd's Open Form with regard to the safety of the ship, its crew and the protection of the environment	Green							
Ensure that personnel boarding the vessel is holding all valid documents, licences, certificates and medical report in original	Green	Yellow	Yellow					
Ensure that ship's certificates are valid and protected from unauthorized personnel	Green							
Arrange "Safety Meetings" on monthly basis	Green	Green	Yellow	Yellow				
Ensure that sufficient crew is on board at all time in order to manage potential emergency situations and to perform all ship's operations safely.	Green	Yellow		Yellow				
Conduct briefings on the Management System for all crew		Green	Yellow					
Ensure that the Life Saving Appliance, Safety and Fire-fighting equipment are well maintained and ready for use		Green	Yellow		Yellow			
Navigation and bridge watch and mooring / unmooring operations		Green	Green					Yellow
Planning, execution and management of Deck and mooring Equipment /Fittings maintenance. painting and maintenance of structures and decks		Green						Yellow
Requisition of stores, consumable and parts for the relevant department		Green			Green			

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Responsibilities and Duties	Master	Chief Officer	Deck Officer	Chief Engineer	2nd Engineer	Engine Officer	Oiler Cook	AB
Stowage of supplied items for the relevant department								
Ensure adequate housekeeping within the concerned department								
Testing of all navigation equipment, steering gear, and communications equipment,								
Training the crew on correct use of Life Saving Appliances and Fire-Fighting equipment								
Assist the Master and Chief Officer in performing their duties								
Ensure that all required medicines and first aid kit are available and not expired								
Corrections/updating of nautical charts and publications								
Programming and recording all drills and exercises as defined by RLPL								
Planning, execution and management of Engine Equipment /and ship's machinery maintenance, including pumps, auxiliary engines, etc.								
General working efficiency and discipline within the Engine Department								
General working efficiency and discipline within the Deck Department								
Planning and supervision of bunkering operations, sludge/bilge discharge to shore facility or barge								
Ensure that samples of Fuels and lube oils are taken and analysed in accordance with the RLPL instructions								
Update and maintain the Planned Maintenance System and spare parts inventory / Deck Dept								
Update and maintain the Planned Maintenance System and spare parts inventory / Engine Dept								
Attending the engine room when the vessel is manoeuvring.								
Ensure the correct operational maintenance of the air-conditioning and refrigeration systems of the vessel.								
Periodically test the bilge alarms and emergency stops for the pumps.								
Carry out a physical check of the condition of all spare gear, reporting any item which is unserviceable								
Ensure that all tools and equipment supplied by the Company are preserved and used in the appropriate manner.								
Engine watch								
Supervision and general maintenance of Diesel Generators								
Maintenance of Main Engine fuel valves and exhaust valves.								

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Responsibilities and Duties	Master	Chief Officer	Deck Officer	Chief Engineer	2nd Engineer	Engine Officer	Oiler Cook	AB
Efficient maintenance and upkeep of all electrical equipment that is in his charge								
Efficient working condition of all electrical machinery fittings and equipment								
Conduct and record megger test on periodical basis								
Look out on the bridge and deck watch								
Deck painting and general maintenance, including moorings and cargo gears								
Cooking and food handling								
Serving for meals and whenever required by senior shipboard staff								
General cleaning of accommodation pantries, mess rooms, laundries officers' cabins and public spaces								



Responsible Person



Supporting Person

The table above indicating all responsibilities and duties shall be accessible to all crew members in order to ensure that everyone on board is aware of his duties and with the importance of their on-board activities.


1.3 Ship Safety Officer

Chief Officer is designated as the Ship Safety Officer. He is responsible for the compliance of the following:

- Procedures as stated in the Company Policy and Safety Management Manuals
- Code of Safe Working Practices for Merchant Seaman
- Report of accidents and dangerous occurrences
- All regulatory requirement regarding to safety
- Improve the safety culture and safety measures onboard

To comply with the above, the Chief Officer is to;

- conduct Safety Committee Meeting
- carry out Safety training and drills
- constantly monitoring and improving the safety consciousness among the crew
- ensure Risk Assessment is being carried out and crew briefed before carrying out any routine or non-routine job
- investigate accident/dangerous occurrence/any potential hazards

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- make recommendations to the Master to prevent recurrence of any accident or removing the hazards
- ensure that safety instructions, rules and guidelines are complied with
- train, identify the requirements, maintenance, disposal, evaluation, and monitoring of Personal Protective Equipment used onboard as well as those issued to the individual crew
- stop any work which causes or may cause serious accident
- ensure safety familiarizations are given to crew that have just joined the vessel
- carry out occupational health and safety inspections on every part of the vessel

1.4 Composition of the Watch

The composition of the watches is to be adequate and appropriate to the prevailing circumstances and conditions.

It is responsibility of the Master (for deck Department) and of the Chief Engineer (for Engine Department) to adequate the number of personnel on watch in such circumstances and whenever deemed necessary in order to keep always a “Basic Watch Condition”, taking into account that all watch-keepers have sufficient hours of rest in accordance with STCW and MLC2006 requirements.

Under normal operating conditions the composition of the watches shall be:


	Deck Department	Engine Department
Navigation	<ul style="list-style-type: none"> • 1 Certified Deck Officer • 1 AB 	<ul style="list-style-type: none"> • 1 Certified Engineer
Moored / Anchored	<ul style="list-style-type: none"> • 1 Certified Deck Officer • 1 AB 	<ul style="list-style-type: none"> • 1 Certified Engineer

1.5 Delegation of Duties

Whenever required duties can be delegated by the Master or Chief Engineer providing that:

- The person(s) to whom the duty has been delegated is skilled, experienced, qualified and fit;
- No law or regulation is breached;
- Written delegation is signed by the Master or Chief Engineer and accepted by the delegated person.

When delegating their duties, the Master and Chief Engineer should bear in mind that they are still fully responsible of the delegated task.

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1.6 Working Language

The working language on board is English. It is Company Policy that English is used during working hours. However, on vessels flying Indonesian flag and manned solely by Indonesian crew, Bahasa may be also used.

1.7 Discipline and Disciplinary Actions

The shipboard personnel should understand that they are in every respect subject to the control and orders of the Master, Chief Engineer and other Officers. The Master is to enjoin to maintain a combination of firmness with courtesy in his dealings with crew members.

Similarly, each Officer is to extract directly from those under him unequivocal and respectful compliance with his orders, which must be given and received with the courtesy due to the respective positions.

The proper conduct of the Master, Officers and men has a critical bearing and influence on the reputation of the Company and Safety of the vessel, all effort should be made to preserve the highest state of efficiency in this respect.

A high standard of discipline set and maintained by personal example is expected and every effort should be made by the Officers to deal with petty grievances and complaints. Swearing and intemperate or abusive language will be severely dealt with.

1.7.1 Disciplinary Actions

Depending on the situation (e.g. violence, violation of law, smuggling, desertion, lack of ability, etc), disciplinary actions such as dismissal from service, should be preceded by at least two official warnings unless the Seafarer Contract of Employment states otherwise.


Official warnings to be given by the Master in the presence of at least one of the senior Officers with entry in to the Official Log Book, DPA and the Crew Manager should be informed accordingly.

Disciplinary actions likewise to be entered in the Official log book and the offender to be notified to the concerned crew member in writing.

In case of dismissal, Company authorization should be obtained first and the appropriate contractual clause for termination of employment is to be mentioned in the notification. Copies of all relevant documentation (Logbook abstract, written notification etc.) to be sent to the Office.

1.7.2 Grievance Procedure

When a ship staffs feels aggrieved in respect of matters pertaining to his work or the Company and need consultation, he should follow the Company's Grievance Procedure. The Company will make every effort to settle all genuine grievances expeditiously and fairly.

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Step 1

The impacted employee should discuss fully the grievance with his Supervisor (within three (3) days of its arising) to ensure that there is no misunderstanding concerning the facts of the situation. He is encouraged to discuss the facts fully and frankly. The Company expects that most grievances can and should be resolved after a full discussion of the facts. However, if the employee is not satisfied or is otherwise unable to discuss the matter with his Supervisor, he/she may take the matter to Step 2.

Step 2

The grievance will be heard and discussed with the employee by the Head of Department Manager and Master. At this point, the grievance may be put in writing. The facts of the case will be explored with a prompt revert. However, if the employee is still not satisfied with the response, he may proceed to step 3.

Step 3

The employee may take the opportunity to discuss the problem at a third level with the DPA. After the discussion, the decision made shall be considered final.

At each level of this grievance procedure, the Company will demonstrate willingness to hear the employee's thoughts on any problems, complaints or suggestions.

1.8 Safe Manning

To ensure, safe, efficient and secure operations, sufficient number of seafarers is employed on board vessels managed by RLPL. For this particular purpose, concerns like fatigue and type of the operations of the vessel are taken into consideration. Additional seafarers are employed whenever required.

As a minimum, ships are manned in accordance with the minimum safe manning levels required by the Flag Administration. (Refer to Ship's Minimum Safe Manning Document)


1.8.1 Custody of Crew Certificates and Documents

Office shall hold custody of original certificates of competency and training certificates as well as seaman's books and passports of all crew. Once a crew member signs on, his certificates and licences must be checked against the following matrix to ensure that nothing is missing. Copies will be given to the Master for verification purposes.

1.9 Qualification and Certification of Seafarers

The Master and other senior officers shall demonstrate sufficient experience on tugboats and towing operations.

Its RLPL responsibility to ensure that the Master all crew members are qualified and certified to perform their duties. No crewmember is permitted to work on board any managed vessel if not properly certified, qualified (for the rank and type of vessel) and medically fit.

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To ensure that all seafarers are qualified, the following checks are carried out:

- Pre-joining check of training certificates, licences and endorsements at Manning Agent office;
- full check of original certificates, licences, endorsements and medical certificate prior to joining the vessel. This check should be performed by the manning agent; and
- Random check of certificates, licences, endorsements, and medical certificates during internal audits on board ship, at the RLPL's office and at the Manning Agent's Office.

Certificates are checked against the latest mandatory requirements that are summarized in the following 'Crew Recruitment Matrix'

Crew Recruitment Matrix

SEAFARING CERTIFICATES	MASTER	CHIEF OFFICER	DECK OFFICERS	CHIEF / 2ND ENGINEER	ENGINE OFFICERS	A/B	OILER	CADET
Certificate of Competency (COC)	V	V	V	V	V			
Certificate of Endorsement (COE)	V	V	V	V	V			
Basic Safety Training (BST)	V	V	V	V	V	V	V	V
Proficiency in Survival Craft and Rescue Boats (SCRB)	V	V	V	V	V	V	V	V
Medical First Aid (MFA)	V	V	V	V	V	V	V	
Medical Care On Board Ship (MC)	V	V	V	V	V	V	V	
Advanced Fire Fighting (AFF)	V	V	V	V	V	V	V	
Global Maritime Distress Safety System (GMDSS) / GOC / ORU	V	V						
Bridge Resource Management (BRM)	V	V	V					
Engine Resource Management (ERM)				V	V			
Ship Security Officer (SSO)	V	V	V	V	V			
ARPA & RADAR Simulator	V	V	V					
Rating as Able Seafarer						V	V	
Seafarers with Designated Security Duties (SDSD)						V	V	
Security Awareness Training (SAT)						V	V	V
Medical Fitness Certificate + MCU Report	V	V	V	V	V	V	V	V
Seaman Book	V	V	V	V	V	V	V	V

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1.10 Promotion and Demotion

No crew member shall be promoted or demoted or dismissed without authorisation of the RLPL Head Office.

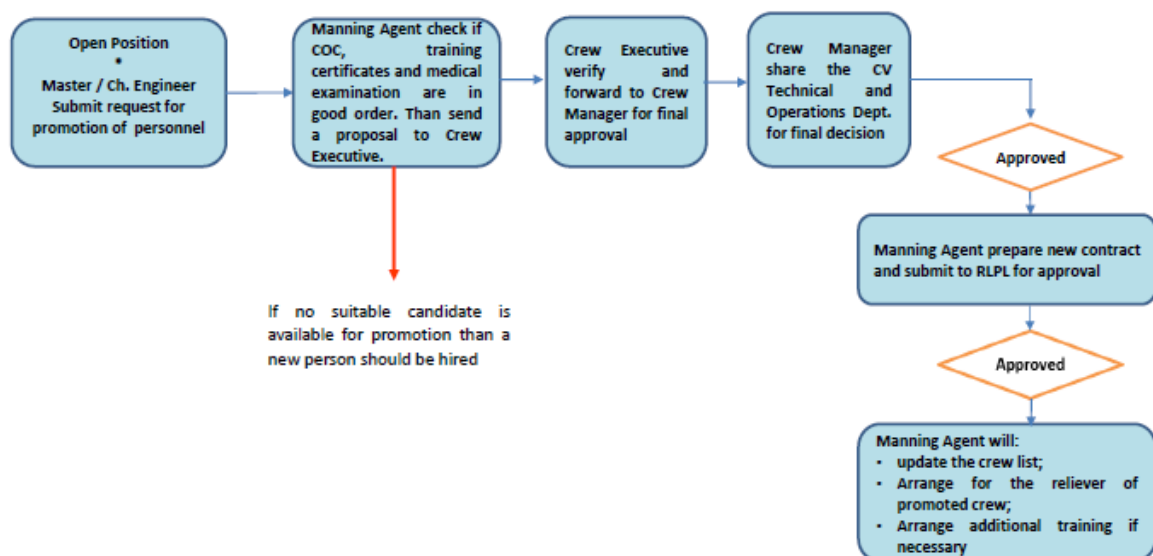
Promotion of crew is based on:

- Should there's any requirements which is based on several reasons e.g. Crew with a higher rank decides to terminate the contract or if otherwise contract will not be renewed, demand on the increasing number of personnel based on participation required manpower in one unit of work in able to support the operations.
- Other promotions may be issued at the discretion of the Management based on the basis of needs and service to the company/ ship for individuals who have provided outstanding service


The things that make as a reference and/or would determine promotions are:

- Regular performance assessment/ Appraisal report on every 12-months working contract period.
- The completion of a given project in a routine work.
- Time occupied the position below the level of the position to be promoted should not be less than 1 year

Figure 1 - The Promotion Process



Ratings obtaining Certificate of Competency (COC) as Deck Officer (OOW Nav) or as Engine Officer (OOW Eng) may be required to sign a contract as Cadet before being promoted to Deck Officer or to Engine Officer.

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1.11 Seafarer Employment Agreement and Conditions of Service

Each seafarer working on board the managed vessels shall, prior to embarkation, agree and sign an “Individual Working Contract”, which shall be countersigned by the Shipowner or by the representative of the Shipowner (e.g. the appointed manning agency). The original copy of the working contract should be kept by the seafarer. If the Individual Working Contract refers to a Collective Bargaining Agreement, copy of such agreement must be kept on board for prompt reference of the crew members.

1.12 Service on board

Standard duration of contract of employment for Officers and Ratings is as follows:

Master & Chief Engineer	Officers & Ratings
12 Months	12 Months

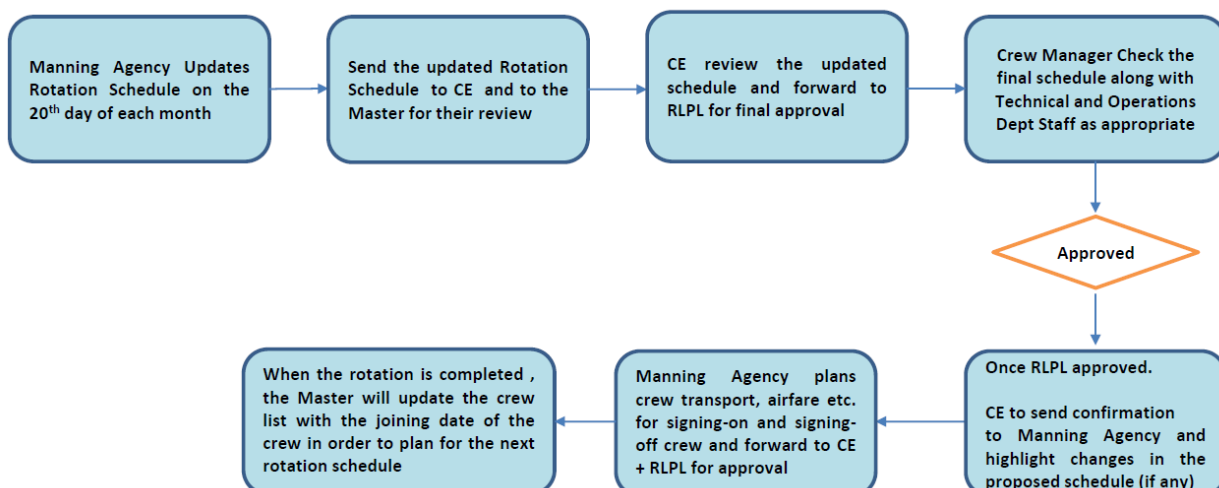
Based on rotation period of 11 months on board and 1 month on leave for all seafarers


Whenever necessary, the duration of contract may be different from the above requirement, but in any case, it shall never exceed one year.

On completion of contract / rotation on board, the necessary arrangements will be made by the Manning Agency (on behalf of RLPL) to relieve the crew member. Any request for extension of service on board should be submitted in writing to the RLPL well in advance and should be confirmed by the Master and/or Chief Engineer.

Dissent to this request either by the Master or by the Chief Engineer should be mentioned on the original letter of request. It is the RLPL’s policy to avoid extension of contract in order to follow proper planning, however an extension may be considered by the Company in certain circumstances.

Figure 2 - Crew Rotation



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The simultaneous disembarkation of the Master and Chief Engineer with the relevant department senior Officer shall not take place on board in order to ensure that an experienced Officer is always available both for deck and engine department.

1.13 Minimum Age and Young Seafarers

In accordance with international and national requirements, no seafarer under the age of 16 can be employed on board any kind of vessel.

Due to safety reasons, RLPL has established that no young seafarers can be employed on board managed vessels except they are engaged for training purposes, e.g. cadets,

Whenever a 'Young Seafarer' (Age between 16 and 18 years old) is employed for training purposes, the Master shall ensure that:

- Such a seafarer is not involved in any night work (20:00 hrs to 06:00hrs)
- Working hours should not exceed 8 hrs per day and 40hrs per week, and overtime should be worked only where unavoidable for safety reasons
- Sufficient time should be allowed for all the meals, and a break of at least 1 hour for the daily main meal should be assured; and
- A 15-minute rest period should be allowed as soon as possible after a 2-hours of continuous work.

The hours of rest may be divided into no more than two periods, one of which shall be at least 6 hours in length and the interval between consecutive periods of rest shall not exceed 14 hours.

1.14 Master and Chief Engineer Handing Over

Prior to signing off, the Master and the Chief Engineer should prepare their handing over report using the form provided by RLPL and submit to their relievers.

Copy of the handing over report should be forwarded to RLPL Head Office.

1.15 Motivation


Motivation of personnel on board is one of the means to achieve safety and pollution prevention.

All Personnel must thus understand that the adoption of the Occupational Health, Safety and Quality Management System by the Company is not simply a formal exercise or a question of image, but the means to achieve the objectives that the Company has set itself through its Policy.

For this purpose, as soon as each crew member embarks, he is to receive, directly by the Master or by a senior Officer delegated by the Master, adequate information about the Safety, Security and Quality Management System.

1.16 Appraisal of Shipboard Personnel

The main objective of appraisals is to measure and improve the performance of the shipboard staff and increase their future potential and value to the company. Other objectives include improving

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communication, understanding training needs and clarifying roles and responsibilities. Appraisals should not be used for dismissing people but instead to report training needs or actions to achieve the necessary competence.

The Master shall forward to the Crewing department the Appraisal Report on each crew member (excluding the Chief Engineer) using the relevant form, in each of the following circumstances:

- at the completion of the probationary period;
- at the end of each contract, including Master and Chief Engineer

The appraisal report shall always be signed by the Master even if completed by the Chief Engineer for the engine staff in which case the appraisal card will be signed by both.

The evaluation of Masters and Chief Engineers is made by the Head of each department or Superintendent in charge of the ship at every signing off using the relevant form and during the Company monthly meeting the evaluation will be discussed by all participants and shall take into consideration the following:

1.17 Prevention of Fatigue

Each seafarer employed or engaged on board a ship managed by RLPL shall observe the following hours of rest unless otherwise directed by Flag Administration or local regulations

Minimum hours of rest shall be not less than

- 10 hours in any 24-hour period and
- 77 hours in any seven-day period

1.17.1 Working Arrangements

A table with the shipboard working arrangements must be posted in an easily accessible place on-board the ship. The table must cover each position of personnel working on board and shall contain at least:


- (a) the schedule of service at sea and service in port; and
- (b) the minimum hours of rest

The working arrangement table must be in the form approved by the competent authority (see the attached format) and in the working language or languages of the ship and in English.

Whenever is necessary, the Vessel Management Team may duplicate the working arrangement table in order to indicate separately the scheduled work hours at sea and in port (e.g. during repairs / drydocking).

1.18 Shore Leaves

No personnel shall be granted for shore leaves unless approved by RLPL in advance. Master shall ensure that enough crew members are on board at all time to deal with current ship's operation and with any emergency situation which may arise.

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The permission of the Master, or in his absence, of the Officer in charge, must be obtained by any crew member wishing leave of absence for any reason whatsoever.

Engineers shall not leave the ship without the permission of Chief Engineer and the knowledge and agreement of the Master.

A leaving crew member must always leave the key of his room and any other ship's key which he may normally have in his safe keeping, to the deck duty Officer, furthermore he must note the expected vessel sailing time in order to be back on board at least two hours before the sailing time.

1.19 Authorised Visitors

Only authorised visitors can board vessels managed by RLPL. Visitors shall be escorted and informed on emergency. Visitors should also be briefed preferably in the site office before boarding the ship.

For their own safety, visitors are not allowed to stand outside the accommodations during mooring or bunkering operations.

1.20 Smoking Regulations

As per RLPL's Policy, Smoking is prohibited at all times:


- on main deck, open decks and mooring stations;
- in bed; and
- inside the engine spaces, including workshops, steering compartment and stores.

Furthermore, smoking is not permitted during bunkering operations, in the vicinity of bunker tanks vents and in any other dangerous areas established by the Master.

Safe and Correct disposal of cigarettes ends is essential.

Smoking or Non-Smoking areas, as appropriate, should be identified and clearly marked.

Suitable ashtrays should be provided at the designated smoking areas. Electronic cigarettes are also considered a source of ignition and therefore they should not be used in any hazardous area.

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1.21 Records and References

- MLC 2006 Convention Regulations 1.1, 1.2, 2.3 and 2.7
- ISM § 5 and 6.1, 6.2, 6.3, 6.6 and 6.7
- ISO 9001:2015 § 5.3
- ISO 14001:2015 § 5.3
- ISO 45001:201x § 5.3
- Crew External Training Plan
- Crew Recruitment Matrix
- Crew employment contracts
- Ship's Staff Appraisal Report – Form RTG-IMS-CRF-009
- Record of Rest hours – Form RTG-IMS-CRF-014
- Register of Visitors
- Letter of indemnity for visitors and relatives
- Hand-over Form (Master – Chief Engineer) – Forms RTG-IMS-CRF-001 and RTG-IMS-CRF-002
- Delegation of duties Form (Master – Chief Engineer)
- Manning Agreement
- IMO/ILO Model format for a table of shipboard working arrangements; and
- IMO/ILO Model format for record of hours of work or hours of rest of seafarers

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2. Onboard Familiarization and Training

2.1 General

All training, whether mandatory or discretionary, has to be completed within a time frame set for each rank. Every seafarer or supernumerary (crew/technician/passengers) joining a vessel shall be briefed and/or trained as required.

Onboard familiarization is described in the following table:

	Master & Deck Officers	Ch.Eng & Engine Officers	Ratings	Passengers & Technicians
Upon Embarkation	Management System Familiarization including Tug & Barge Instructions and ERCP			
	IMS Familiarization Record Form RTG-IMS-CRF-003			
	Within 7 Days			
Upon embarkation	Safety & Familiarization Embarkation Briefing			
	Form RTG-IMS-CRF-004			
	Before Departure			
General Safety Instructions				Safety Induction for Visitors
				Form RTG-IMS-CRF-007
				Before Departure
Whenever joining a ship	Deck Officers Familiarization Questionnaire	Engineers Familiarization Questionnaire		
	Form RTG-IMS-CRF-005	Form RTG-IMS-CRF-006		
	Within 1 Month	Within 1 Month		
Video Training	Depending of the Training Topic	Depending of the Training Topic	Depending of the Training Topic	
	When required	When required	When required	

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As per Drill Schedule	All shipboard personnel including supernumeraries have to attend drills and safety meetings as requested by the Master. Visitors and Technicians shall receive proper instructions/ guidance in order to avoid interferences with the crew during an actual emergency.
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When familiarising with the Procedures and Instructions, the Master will ensure that each officer has read the manual, clarified the questions if any and confirms familiarity with the Procedures and Instructions.

Furthermore, the Master is responsible for:

- developing a training plan, and providing the crew with necessary training on board according to the crew's training needs. On-the-job training is to be conducted by a senior or experienced crewmember.
- ensuring that the Officers and Crew are familiar with their duties by means of updated muster lists and regular scheduled drills on board. The Emergency Contingency Plan and related identified emergencies must be exercised regularly according to a program developed by the Master.

A 'training analysis meeting' must be held during the first month on board the vessel. The results of this meeting must be recorded for submission to the DPA in a report [C003] which should be sent to the head office for the attention of the DPA and the original should be filed on board

2.2 Identification of Training Needs

The Master is responsible for identifying the specific training needs of the crew. The Master should hold a training analysis meeting at least once during his period of service on board the vessel to determine what training, if any, the members of his crew require. Training needs should be reported to RLPL through the appraisal report and recorded on the form [RTG-IMS-CRF-009] for the particular crew member.

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2.3 Effectiveness of Training

On board training is the most effective method of training. It is the duty of the Master to ensure that knowledge is passed down through effective training, familiarization and drills.

Training that has not produce desirable results should be repeated at the earliest opportunity or refreshing training shall be reported as additional training needs.

2.4 Safety and Emergency Drills

The Master shall devise regular emergency drills, which can be performed at the same time as fire and boat drills, or at any other time. These would be devised to simulate an actual emergency situation and to train the crew in emergency procedures and test the crew's readiness and knowledge of necessary techniques.

Each drill shall be performed **at least once per year**. In certain circumstances, refer to the Emergency & Contingency Plan Drill Schedule, the vessel will be requested to take part in a drill in conjunction with the Head Office Emergency Response Team. Notification and instructions regarding these drills will be provided near to the time by the head office.

The emergency drill subjects can be found in the Shipboard Emergency Contingency Plan.

2.4.1 Fire-Fighting

Master to ensure that each member of the crew shall participate in at least one fire drill per week. The drills shall take place **within 24 hours** of joining the vessel if more than 25% of the crew has not participated in a fire drill on board that particular vessel in the previous month.

On board training in the use of the fire safety equipment shall be given to the new crew member as soon as possible, but **not later than 2 weeks** after first joining the vessel.

Within one month the new crewmember must have received training in all of the ship's fire equipment.

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Drills are to be imaginatively devised, and should ensure that all ship staff receive experience with all ship's gear on a rotation basis.

2.4.2 Abandon Ship

Master to ensure that each member of the crew shall participate in at least one abandon ship drill **every month**. The drills shall take place **within 24 hours** of joining the vessel if more than 25% of the crew has not participated in abandon ship drill on board that particular vessel in the previous month.

Each abandon ship drill shall include: -

- Summoning of crew to muster stations, with verbal order from Master.
- Reporting to the stations and preparing for the duties described in the muster list.
- Checking that crew is suitably dressed.
- Checking that life jackets are correctly donned.
- Simulation of launching life rafts.

Drills shall, as far as practicable, be conducted as if there were an actual emergency.

2.4.3 Life Saving Appliances Training

On board training in the use of the ship's lifesaving appliances, including survival craft equipment, shall be given as soon as possible but not later than 2 weeks after a crew member joins the ship. However, if the crew member is on a regularly scheduled rotating assignment to the ship, such training shall be given **not later than 2 weeks** after first joining the ship.

Instructions in the use of the ship's lifesaving appliances and in survival at sea shall be given at the same interval as the drills. Individual instruction may cover different parts of the ship's lifesaving system, but all the ship's lifesaving equipment and appliances shall be covered **within any period of 2 months**. Each member of the crew shall be given instructions, which shall include but not necessarily be limited to:

- Operation and use of the ship's inflatable life rafts.

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- Hypothermia and the First Aid Treatment for hypothermia.
- Special instructions necessary for use of the ship's lifesaving appliances in severe weather and severe sea conditions.

2.5 Muster Lists and Safety Plans

The muster list and safety/fire plans shall be clearly displayed and the Master must ensure that the crew members are able to read understand and are able to locate their respective muster points.

It is the responsibility of the Master to ensure that:

- the location of safety equipment, LSA and fire-fighting equipment is the same as indicated on the approved fire and safety plan; and
- the Muster List is reviewed prior departure and amended whenever some condition is changed (e.g. change number of crews, inability of seafarer having specific tasks, etc.)

2.6 SOLAS Training Manuals

SOLAS Training Manuals for LSA and Firefighting are provided by the company but must be ship-specific and should be kept available for all crew in the common area.

The manuals should be amended by the Safety Officer onboard whenever there is a change in equipment or procedure. Company should be notified of the changes as soon as possible.

2.7 Safety Information

The Master and Chief Engineer shall ensure that all safety related instructions, are to be given to all crew members.

All emergency instructions are to be in dual languages of English and Bahasa Indonesia. The instructions are to be displayed in the vicinity of the following lifesaving appliances and firefighting equipment:

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- Life rafts launching instructions.
- Fire stations.
- Emergency escapes routes.

2.8 Drills and Training Records

The Master will maintain records of all training programs and drills conducted and records of attendance with performance outcomes as relevant.

When drills are held, details shall be recorded in the deck log book. If a full muster is not held at the appointed time, an entry shall be made in the deck logbook stating the circumstances.

Chronological details of each drill will be compiled, and the record maintained onboard for inspection and audit. A report shall also be made in the deck logbook after each fire drill, boat drill or emergency drill. The report is to be used to plan the drills, and as a control to ensure that the drills are carried out in an effective manner. It is also useful as a way to learn from experience gained on previous drills.

2.9 Records and References

- ISM Code § 8
- ISO 9001:2015 § 7.2
- ISO 14001:2015 § 7.2
- ISO 45001:2018 § 5.4, 7.2
- STCW 95 Convention as amended
- SOLAS Convention Chapter III
- Emergency Drill Annual Matrix – Form RTG-IMS-SYF-008
- IMS Familiarization - Form RTG-IMS-CRF-003
- Safety & Familiarization Embarkation Briefing - Form RTG-IMS-CRF-004
- Deck Officers Familiarization Questionnaire – Form RTG-IMS-CRF-005
- Engineers Familiarization Questionnaire – Form RTG-IMS-CRF-006
- Safety Induction for Visitors - Form RTG-IMS-CRF-007

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- Ship Staff Appraisal Report – Form RTG-IMS-CRF-009
- Training Report – Form RTG-IMS-CRF-015
- Emergency and Contingency Plan
- Shipboard Oil Pollution Plan (SOPEP)



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3 Documents Management

3.1 Purpose

The purpose of this instruction is to ensure that documents:

- are maintained and disposed of as necessary to demonstrate compliance with the requirements of the Integrated Management System established by RT Group and the related National and International requirements;
- remain legible, identifiable and traceable.

3.2 Responsibilities

The Master and the Chief Engineer shall ensure that the Instructions, official logs and records are maintained up to date and that are archived in suitable place for the required time-frame.

Accordingly, each officer in charge for the completing records, logs, check lists and forms shall ensure that all information are accurate, exhaustive and legible.

3.3 Details


Records, logs and forms are identified by one or two letters to identify the department or area (Records, logs and forms are identified by three letters to identify the department or area (e.g. DKF stands for DECK, HOF stands for Head Office, SYF stands for Safety, etc.)

Some records/logs and forms are intended to be permanently retained, this is interpreted as follows:

- permanently available but subject to periodical review as for the applicable procedure e.g. risk assessment, ship's library inventory, etc...
- permanently available as long as relevant, e.g. records related to shipboard personnel (as long as they are employed by the company), copies of certificates, etc.

IMS records and documents are:

- identifiable to the concerned service, person, activity or event;
- dated;
- listed in the IMS documentation list;
- legible;
- stored by the same department/place established by the company;

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- stored in cabinets/files clearly labeled to display their contents;
- protected against damage, deterioration or loss.

Records and other such documents may not be stored in private desk drawers and other obscure locations that are generally not known.

3.4 Retention of Records


IMS records are to be kept on-board each RLPL managed vessels for the period as stated in the following table:

Type of Document	Retention Period
Official Flag State Log Books	For the entire life of the vessel. Once the ship will be sold/scrapped logs should be delivered to the company and retained in the office for 2 years. Alternatively, official logs may be delivered to the flag state Administration if requested.
All records used for ships' operations (Port operations log book, Ship movement log book etc.)	For entire life of the vessel
Technical service reports	For entire life of the vessel
Oil Record Books and Garbage Record Books	3 Years
IMS Controlled Forms and Records	5 Years

Records stored in the archive shall be destroyed when the relevant retention period has been reached.


3.5 Obsolete Documentation

Obsolete or superseded documents must be promptly removed; if still required for future references they must be clearly marked as 'obsolete' or similar wording.

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3.6 Records and References

- ISM Code § 11
- IMS Controlled Documentation List– Form RTG-IMS-HOF-001
- ISO 9001:2015 § 7.5
- ISO 14001:2015 § 7.5
- ISO 45001:201x § 7.5

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4 Health and Hygiene

4.1 General

High hygiene and health standards have to be maintained on board vessels

4.2 Responsibilities

4.2.1 Company Responsibility

The Company is responsible to ensure the health and wellbeing of crew members living on board managed vessels. For this particular purpose, an adequate daily budget is provided for each person working on board vessel. Different cultures and religions are taken into consideration. In particular, the Company is responsible for:


- Complying with the national laws in respect of food and water to be supplied on board;
- Ensuring that supplied water and food are suitable in respect of the quantity and nutritional value, quality and variety, having regard to:
 - a) The number of seafarers on board;
 - b) The religious and cultural requirements; and
 - c) Duration and nature of voyage.
- Ensuring adequate organisation and equipment of the catering department:
- Ensuring that cook and catering staff are properly trained and certified as required by Flag State and / or by MLC 2006 or instructed for their positions

4.2.2 The Master and AB Cook Responsibility

Adequate daily budget is provided to the Master of each managed vessel in order to make sure that provisions are supplied.

The Master is responsible to:

- submit the crew provision's budget to office every month. The budget shall include all visitors, etc.
- inquire for quotations and issue the requisition to the approved local supplier. Such a requisition should be signed by the Master and another Officer;
- Ensure that the food and water is adequately handled and stowed;
- National and international regulation in respect of food handling and storage are fulfilled;

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- The weekly hygiene inspection is carried out and documentary evidence is maintained on board for inspection.

The AB Cook is responsible for:

- Ensuring that the food is stowed, handled and prepared in the best hygienic manner;
- Preserving and monitoring the condition of the provisions; and
- Maintaining the inventory of the provisions available on board.

4.3 Food and Catering

4.3.1 Food Storage

The food supplied on board should not be left lying around in ambient temperature to prevent growth of bacteria. It is essential to keep food either very hot (above 63°C) or very cold (below 5°C).

Cooled food items, such as fresh fruits and vegetables, processed and cooked meat products and food prepared for rapid use should be kept covered and stored between 0° and 7°C depending on the produce.

Freezer and cooler compartments should have highly accurate, adjustable thermometer for temperature control. Such a thermometer should be easily visible.

Defrosting operations should be carried out in a cool clean area. Defrosted food should be kept separate from cooked food.

Raw food should always be kept apart from cooked food and milk. Separate fridges are preferred although if in the same unit the raw food must be placed at the bottom to prevent drips that may contaminate prepared food. All food should be covered.


4.3.1.1 Food Storage in Tropical Area

Particular attention should be paid on how the food stored when the vessel is trading in tropical areas such as Indonesia.

As general rule, all kind of food should be covered in plastic containers unless stored in the fridge. Food residues can attract easily insects and can get spoiled quickly.

4.4 Condition of Galley and Pantries

The galley should be equipped, illuminated and maintained in such a way as to ensure good sanitation. The equipment should be made of corrosion resistant, non-toxic materials that are easy to clean.

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Where possible, all galley equipment and utensils should be fixed in place. Non-fixed utensils should be hung or stored to avoid loss, damage or injury to seafarers when the ship roll.

Mechanical ventilation should be used and the ventilation hoods as well as grease filters should be cleaned on a regular basis and mechanical ventilation should be used.

Waste, particularly food waste should be kept in a tightly covered garbage receptacle that must be maintained clean and tidy.

Food stuffs, supplies, cookware, crockery and utensils should be thoroughly cleaned after each use and stored in containers that can be secured when the items in question are not in use. Raw meat should be prepared in a separate chopping board of different colour.

4.4.1 Cleaning of Galley and Pantries

The galley and pantries should be maintained clean and tidy at all times. The galley personnel should perform the washing and cleaning tasks as described in the following table:

Task	Periodicity	Responsible
Washing of utensils, tools, dishes, pots, pans, tables, food grinder and basins	After use	AB Cook
Cleaning of the Oven	Every day at the end of the working day	AB Cook
Cleaning of Stove and plates		AB
Mopping the floor		AB Cook
Cleaning of hood	Once every two days	AB
Cleaning of Stores and Refrigerators	Once every week	AB
Cleaning of Cold rooms	Once every two weeks	AB


Whenever necessary the Cook can request additional manpower from the Chief Officer. Personnel wearing boiler suits and dirty shoes are not allowed to enter in the galley.

4.5 Pest and vermin Control

All efforts should be made in order to eliminate cockroaches, rats, insects or other vermin if noticed.

During the weekly hygiene inspection, the Chief Officer should check and report (as deficiency in the Form C010) if insects or cockroaches are evident.

Furthermore, the Company will arrange a pest control with a specialised shore firm at least once every 12 months on those vessels trading permanently in tropical areas (e.g. Borneo).

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4.5.1 Pest Control

4.5.1.1 Prevention of Cockroaches Infestation

The infestation of cockroaches may be prevented by:

Cockroaches must have a source of water. Depending on the temperature and their size, they can live for a month without any food, but no more than a week without water. Find all the water leaks in the galley, cabins and other places on board the vessel, and fix them. Furthermore, the food grinder should be rinsed with hot water after use

Clean your vessel thoroughly. A clean vessel is key to keeping cockroaches away, and the first place to start is the galley and mess rooms. Wash your dishes and put food away promptly after meals. Clean up crumbs and spills right away, and generally keep the area clean. Pay special attention to range tops, as cockroach loves grease.

Keep food containers sealed, and don't leave food out for extended periods. Don't leave dirty dishes out overnight, and don't leave fruit on the countertop.

Mop the floor routinely to clean up crumbs and sticky spots. Do not slop water against the walls; remember, they need water.

Take out the trash regularly. Have one trash can for food in your house. Don't let it sit for too long. Use a trash can with a lid, rather than one that stays open. Keep it in sealed containers that aren't sitting right next to your house.

Use traps. Adequate traps should be ordered and placed overnight in the most sensitive places.

4.5.1.2 Use of Insecticides

Insecticides are toxic to both pests and humans. However, they need not be hazardous to humans and non-target animal species if suitable precautions are taken.


Most Insecticides will cause adverse effects if intentionally or accidentally ingested or if they are in contact with the skin for a long time. Pesticide particles may be inhaled with the air while they are being sprayed. An additional risk is the contamination of drinking-water, food or soil.

Special precautions must be taken during handling and storage of insecticides.

People who work with pesticides should receive proper training in their safe use and wear appropriate PPE such as mask and goggles.

Precautions

Insecticides should be packed and labelled according to WHO specifications. The label should be in English and in the local language, and should indicate the contents, safety instructions (warnings) and

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possible measures in the event of swallowing or contamination. Always keep pesticides in their original container. Take safety measures and wear protective clothing as recommended.

Storage

Store pesticides in a place that can be locked and is not accessible to unauthorised people or children; they should never be kept in a place where they might be mistaken for food or drink. Keep them dry but away from fires and out of direct sunlight. Do not carry them in a vehicle that is also used to transport food.

Disposal

Left-over insecticide suspension can be disposed of safely by delivering to the garbage facilities (boat or shore terminal). It should not be disposed of where it may enter water used for drinking or washing, fish ponds, sea or rivers. Some insecticides, such as the parathyroid, are very toxic to fish.

4.6 Weekly Hygiene Inspection

The main purpose of the hygiene inspection is to ensure that crew accommodation, galley, mess rooms and other living spaces on board are maintained in a clean and decently habitable condition.

The Master should ensure, with the support of other senior officers, that:

- Supplies of food and water;
- Spaces dedicated to food preparation, food handling and storage; and
- Equipment and tools used to prepare, handle and storage food

Are inspected on weekly basis to ascertain their suitability, maintenance and hygienic conditions. Result of such inspection should be recorded in the controlled form C010 'Weekly Hygiene Inspection'.


The inspection should be carried out by at least one deck senior officer and by one engine senior officer. Deficiencies and corrective actions identified during the weekly hygiene inspection should be also recorded in the Form C010 and reported to the Company accordingly.

4.7 Accommodation and Recreational Facilities

4.7.1 Accommodation

The Master shall ensure that accommodation, mess rooms, galley and sanitary facilities are kept clean and tidy at all times and that equipment is maintained in good and efficient condition.

In order to demonstrate the compliance with the MLC2006, the Master shall ensure that accommodation are inspected on weekly basis during the 'Weekly Hygiene Inspection' and result recorded in the controlled form C010.

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While inspecting the accommodation, the Master and/or the Senior Officers designated by the Master, shall pay special attention to:

- Ventilation and lighting system;
- Water and washing facilities;
Condition of fittings; and
- Rodent and vermin control.

4.8 De-Ratting and Sanitation Control Certificate

A certificate stating a sanitation control and deratting or alternatively and exemption should be obtained by each managed vessel every six months. Such a certificate is issued by the local Port Health Office upon request of the Master (via agent).

4.9 Medical Arrangements

All managed vessels are provided with sufficient medicines and medical equipment as required by the applicable national and international regulations.

Master and his Officers are duly trained in the administration of such medicines and they have been instructed not to hesitate to require medical advice by radio in case of doubts.

Senior Officers serving on board have attended an advanced medical course while all junior Officer and ratings have attended a basic First Aid course.

Among the Deck Officers, the Master shall designate one of them as responsible for the First Aid Kit. His main duty is to check validity of all medicine carried to ascertain the expiry date and forward requisition in due time when necessary. He is also responsible for recording all medicines distributed to crew members in the appropriate "*Medical Log Book*".

The designated officer is not entitled to administer any medicine to any crew member unless authorised by the Master or his deputy.

In cases when the treatment given on board are not effective, when specific treatment is necessary or when requested by the seafarer, medical assistance shall be given in appropriated medical centre.

When treatment is received in a shore medical centre (or by shore doctors) copy of the medical report shall be sent to the Crewing Department. In case of injury, also an "Accident Report" shall be attached to the medical report for the attention of the DPA.

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4.9.1 Medical Treatment

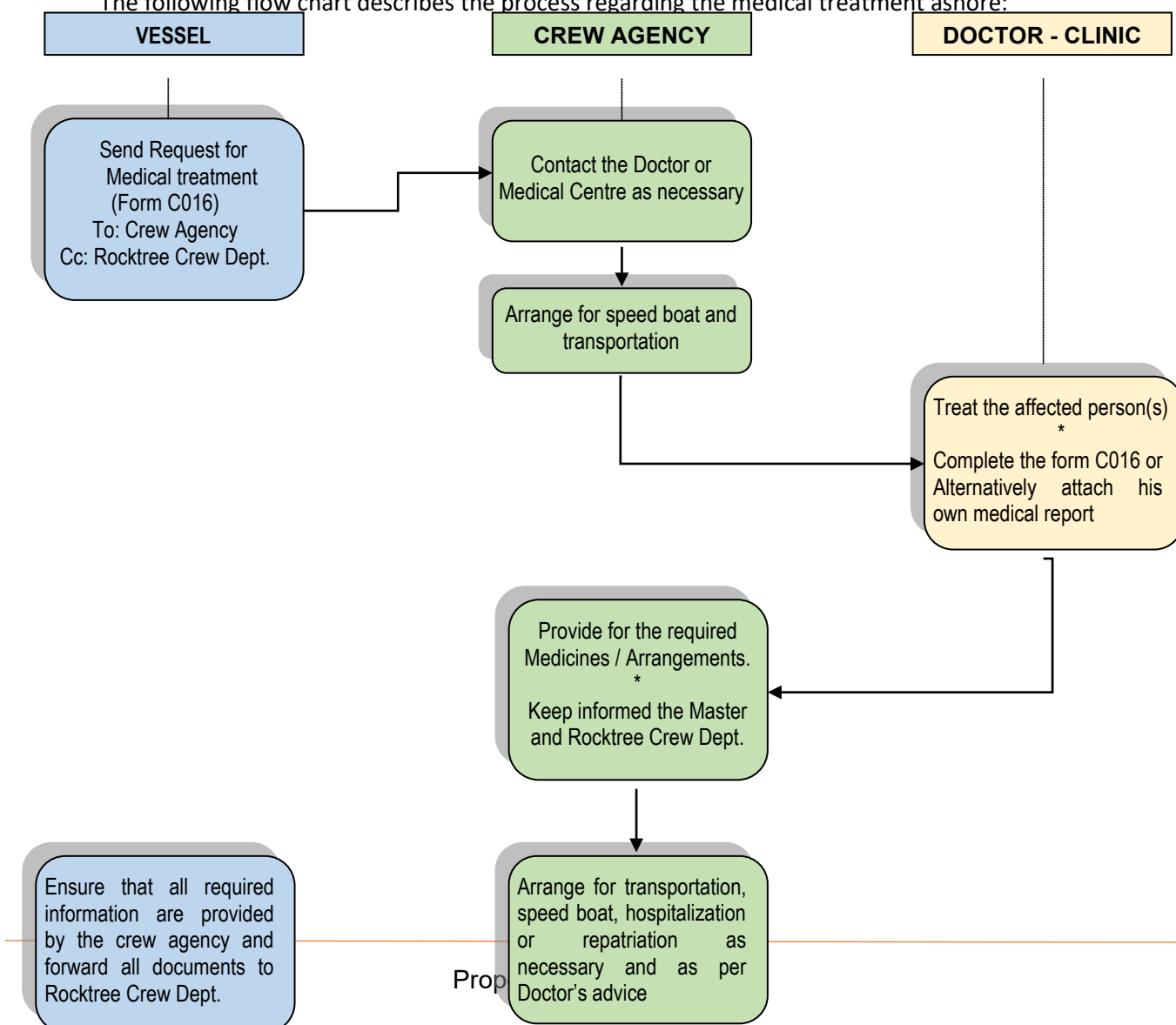
All managed vessels are provided with a First Aid Kit containing all medicines requested by the national and international regulations applicable to each ship depending on the trading pattern and number of crew members the vessel is certified to carry.


4.9.2 Medical Treatment and Assistance

All managed vessels are provided with sufficient medicines and tools which enable the Master to treat a person on board for minor health problems. In such case, the International Medical Guide should be used or a medical advice should be obtained via the local agent.

For significant health problems or whenever the affected person can't be treated on board, the Master should arrange (via crew agent or local agent) the treatment at a shore clinic or hospital.

The following flow chart describes the process regarding the medical treatment ashore:



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Whenever a crew member requires medical assistance, the Master should arrange via the manning Agent the disembarkation of the affected seafarer.

The Form C016 should be completed and forwarded to the Agent accordingly. All communications should be sent in copy to Rocktree (Crew Department).

Is responsibility of the agent to:

- arrange the transportation, including the speed boat from the vessel to the clinic/hospital and vice versa;
- appoint the appropriate doctor;
- ensure that the seafarer(s) has (have) collected all the documents/reports issued by the doctor;
- provide for the prescribed medicines;
- arrange hotel accommodation or repatriation if necessary; and
- keep both, the Master and Rocktree Crew Department fully informed about the position of the seafarer(s), doctor's diagnosis and other important information.

4.10 Drug & Alcohol Policy


4.10.1 Company's commitment

The Company is committed to promoting a safe, healthy and productive working environment for all employees.

The Company recognises that drugs and alcohol abuse may impair the personnel's ability to perform their duties.

This is particularly valid for those employees whose tasks entail safety and health risks for themselves and others. The shipboard personnel, for the evident reason that any error or accident they make may cause loss of lives, fire and environment pollution, is to be considered particularly exposed to these dangers. It must not be forgotten that a ship is a very complex system which always require efficient personnel ready for action.

The Company deems it important therefore to establish that supply, distribution and consumption of alcoholic beverages is prohibited.

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4.10.2 Controls on board - Deterring measures

Measures aimed at deterring drug smugglers and alcohol consumption by crew members have been adopted by the Company.

For this purpose, all shipboard personnel are periodically and prior to signing on required to undergo blood and urine tests for traces of drugs and alcohol.

The Company has established following deterring measures:

- Total absence of alcoholic beverages of any type on board the managed vessels;
- Pre-joining medical examination which include Drug & Alcohol Test;
- Unannounced alcohol test conducted at Master's discretion for those people coming from shore;
- Unannounced Drug & Alcohol Tests conducted at interval not exceeding 12 months. Such a test will be arranged by the Crewing Department at the most convenient port.
- Post Incident Drug and Alcohol test whenever a serious marine incident is experienced;

Results of the alcohol tests conducted on board by the Master will be recorded in the appropriate form while the results of the D&A tests performed by shore laboratory will be forwarded to the attention of the Head of the Crewing Department for filing purpose.

4.10.3 Controls on board - Privacy and Confidentiality of the Tests


The results of the test either conducted on board and ashore will be kept strictly confidential and cannot be disclosed to entities other than Head of Crewing Department. It is responsibility of the Master and/or of the Head of the Crewing department to ensure that such results are maintained strictly confidential.

Only exemption to the above can be considered in exceptional cases when results of the tests can be useful to sort out from disputes provided the seafarer had expressed his agreement in writing to disclose such results.

4.10.4 Procedures and instructions

Notwithstanding the above instruction concerning the prohibition of using alcohol on board the managed vessel it may happen that assumption take place ashore. On this regard, seafarers are warned that they are subject to be reported to the Company for disciplinary action in the following cases:

- 1) **Crew members coming from shore** are having more than 0.40% Blood Alcohol Concentration (BAC) level Breath analyser readings

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- 2) **Crew members on board** are having more than 0.00% Blood Alcohol Concentration (BAC) level Breath analyser readings

4.10.5 Disciplinary Action for breaching D & A Policy

Following actions will be taken against whom breach the Company D&A Policy:

- **Immediate dismissal** with reserve to debit all repatriation expenses. In case of drug smuggling and consumption the Master shall report to the competent **authorities**.

4.10.6 Instructions for carrying out the drug test

Unless there is reason for blood testing, the test is carried out only by analysis of the personnel's urine

The test will be carried out for each individual at a recognised laboratory, prior to signing of the contract and the following substances should be tested:

- Amphetamine
- Opiate / Morphine
- Cannabis / Marijuana


4.10.7 Posters

Posters listing the effects of drug use and alcohol abuse are hung up at various points within the ship's living quarters;

Posters containing the Company's policy in respect of drug and alcohol use and abuse are hung up at various points within the ship's living quarters.

4.10.8 Company controls

The Company shall verify that the D&A policy is correctly implemented and that tests are regularly performed.

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4.11 Records and References

- ISM Code § 1.2.2.2 and 6.2
- ISO 9001:2015 § 8.1
- ISO 14001:2015 § 8.1
- ISO 45001:2018 § 5.2, 8.1
- Weekly Hygiene Inspection – RTG-IMS-CRF-010
- Illness and Medical Report – RTG-IMS-CRF-016
- MCA Code of Safe Practices for Merchant Seafarers
- IMO Guidance on Prevention of Drug and Alcohol Abuse



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5 Towing Operations

5.1 Definition

Towing operations mean towing on the stern using towline, and does not include side-tow or pushing..

5.2 Port Operations

5.2.1 Safe Access to Ship

Means of safe access should be provided.

Watchman standing at access area should wear helmet, coverall, safety shoes, portable VHF radio and must keep the "Record of visitor" updated.


A warning notice board should be placed in prominent place nearby the access ladder to warn visitor and following wording must be used:



5.2.2 Gangway Watch

Whilst vessel remains berthed alongside a terminal or anchored in inner roads, a proper deck watch should be maintained at all time to prevent boarding of unauthorised persons and to monitor movements of those persons visiting the vessel for whatever reason and/or business.

The watchman stationed at the access area should make sure that each visitor complies with what stated in the notice board and if in doubt, he should contact by radio the Officer in watch for instructions.

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Furthermore, the watchman, should ensure safe access is provided to visitors at all times.

5.2.3 Boarding Point Check

After making sure that visitor has got the proper authorisation to board or he has a valid reason for boarding.

The deck personnel on watch will ask him to record his own name, time of boarding and then sign the proper register made available nearby gangway giving to the visitor a numbered boarding card that must be exhibited all through his stay on board.

Visitors are encouraged to read carefully the safety instructions printed on the cards itself and to adhere to the instructions given. The boarding card should be returned to the watchman and the time of leaving the vessel must be recorded in the appropriate column of the above mentioned "Register of Visitors".


Visitors are not allowed to stand outside the accommodations while vessel is under towing operation, berthing, un-berthing, bunkering, loading stores and provisions or at sea.

5.2.4 Stowaways

In addition to the normal security watch in the ports where the potential stowaways risk is evident and warned, additional watch man shall be provided as well as safety patrol organised as necessary.

5.2.5 Tugs and other Small Crafts Alongside

The number of craft which come alongside and the duration of their stay should be kept to a minimum. The responsible officer should instruct personnel manning the craft about smoking and safety regulations to be observed on the craft. In the event of breach of the regulations it will be necessary to cease the operations.

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If any unauthorised craft come alongside or secure in a position which may endanger the operations, they should be reported to the port authority and, if necessary, operations should be stopped.

Masters are reminded that often, the authorities do not allow any craft to come alongside a ship during operations in fact in many occasions, bunkering, stores and crew changes are carried out only before or after cargo handling operations.

5.3 Mooring and Anchoring

Means of safe access should be provided.

Lifebuoy with lifeline must be available in the vicinity of the of the access area.

5.3.1 Inspection by Master and Senior Officers

To ensure compliance with international standards of hygiene, the Master should require that adequate hygienic precautions in crew accommodation and lavatories, in galley spaces, refrigerators and dry store rooms are efficiently adopted.


Weekly inspections of crew accommodation and lavatories, galley spaces, refrigerator and dry store rooms are to be carried out jointly by the Chief Officer and the Second Engineer.

The results of the inspections are to be reported to the Master and the results recorded in Official Log Book or on the Deck Log Book under the responsibility of the Chief Officer

5.4 Ship Security

5.4.1 Master's Standing Orders

Master shall issue his standing orders as far as the port operation is concerned. Standing orders should contain instructions about the composition of the watches, time interval for mooring checks, time and height of the tide, notice board to be displayed at access area including information to be displayed such as expected time of sailing and time at which whole crew must be on board.

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5.4.2 Watch Schedule

Watches shall be arranged in such a way that sufficient resting time is granted to all watchkeepers as requested by STCW and without affecting the safe operation of the ship.

Watches while in port shall be composed by at least one licensed deck officer and one rating. Number of ratings can be increased at Master's sole discretion depending on prevailing conditions.

Under normal circumstances, port watches shall be arranged on "four hours on – eight hours off" basis and the schedule of the watches, signed by the Master, shall be posted in a prominent place where can be easily seen by all concerned.

5.5 Mooring Operations

5.5.1 Handling of Moorings

Personnel assigned to mooring stations should know that majority of accidents and injuries take place at mooring stations. Mooring and un-mooring are the most hazardous situations. Crew assigned to that station must remember following precautions:


- They must clear of all ropes under heavy load even when not directly involved in their handling.
- When paying out ropes, watch that both their own and shipmate's feet are not in the coil or loop. Beware the bight.
- They must always endeavor to remain in control of the line.
- Anticipate and prevent situations arising that may cause a line to run unchecked. If the line does take charge, do not attempt to stop it with your feet or hands as this can result in serious injury.
- Ensure that the "tail end" of the line is secured on board to prevent complete loss.

5.5.2 Towing Operations

I. Inspection of Cargo be Towed

A. Cargo/ Equipment/ Vessel to be towed must be inspected

- The tow must be inspected to ensure it meets requirements and an acknowledgement is to be made.
- Inspection for tow barge which will be towed must be performed regularly based.

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- All inspections to be noted on daily log book for deck and reported to the shore office.
- Master shall ensure that the towing equipment onboard his towing boat as well as onboard the unit to be towed is in good condition and certified as per international regulation and still valid.

B. Tying position (berth)

- When the vessel at tying position (berth), take note the tide, tros rope, spring rope fore and aft and ensure that vessel is in hire and all mooring ropes intact.
- Take note of all lashing and cargo and guard vessel to ensure all is secure and safe.
- Provide lighting as necessary.

C. Securing/ fixed rudder

- Normally installed at the back of barge for stability purposes.

II. Preparation and Towing


A. Chief Officer will prepare for towage as follows:

- Ensure tow hook ready for use. Emergency Release tested.
- Bridle to connect tow hook to long towline is prepared on deck at the back of the tugboat.
- Install end of bridle and connect with shackle to the end of long towline on deck.
- Prepare long towline on deck and arrange such that it will be easy to release when tow commences.
- Prepare shackle to connect to end of long tow line to end of short towline.
- Prepare short towline (second towing) with a length of approximately 30 meters and connect end of line with both bridle ends with shackle.
- Install both bridle ends on tow and connect shackle to chain of towing bracket of tow.

B. After all preparation has been carried out, Chief Officer will inform Chief Engineer to prepare main engines and report to Master.

C. Distance of tow line at commencement

- When vessel starts to move, install end of short towline (second towing) to towing hook of tugboat and the bridle that was installed on the tow.

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- The distance of the towline at commencement, including short towline and bridle, should be about 50 meters. This procedure should also be used in narrow navigating channels, as well as inside harbor.

D. Distance of towing line at open sea, in the River and at Anchorage to OGV or OFT.

- At open sea, the short towline and the end of the long towline are joined using shackle. The line is then released as the tugboat moves ahead slowly.
- Length of towline at open sea is one coil of long towline (600 ft = 180 meters) and adds the short towline (50 meters) so that the total length is 230 meters.
- We can add length towing line at River.
- We can add length towing line from anchorage to OFT or OGV.
- When the towline is tight and surroundings safe, tugboat may move ahead at full speed.

E. Preparation prior to arrival at Jetty, OGV or OFT – shorten the tow line

- Reduce speed, direct front part of vessel directly against wind direction of wind, wave and current to ensure that the towline does not get tangled in the propellers.
- As the speed is reduced, the towline will slack and immediately retrieve the line back onto the tugboat and lay the ropes in order on deck.
- After the long towline is retrieved, release the shackle joining the short towline and hook the short towline onto the towing hook.
- If the tow will be berthed or anchor to be dropped, tugboat will come alongside the tow and some crew will be transferred onto the tow to assist.

F. Ensure towline does not get tangled

To ensure that the towline does not get tangled with the propellers during all operations, a crewmember must be stationed at the back part of the tugboat.

III. Release of Towage


A. Releasing of towline

To release the short tow line, tugboat will come alongside to the fore part of the tow; the end of the tow line will be unhooked from the towing hook and slowly retrieved back onto the back of the tugboat.

B. Alongside

There are 3 effective alongside methods:

- a) Alongside of barge by using short line (second towing)
 - Position of barge behind tugboat at the distance about 50 meters.

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- Alongside the barge/vessel can be carried out against current and etc, according to the condition of local channel.
- Control speed when vessel is being alongside the tow and keep a safe distance from the quay, other vessels. Chief Officer together with part of crew must be in position on the barge.
- As the tow is closing onto the quay, throw the throw line ashore so that the tros and spring rope will be attached to shore, as the tugboat slowly berth the tow.

b) Alongside of barge by tow in tandem:

- Position tugboat at astern of the barge either portside or starboard side and tie up the tros/spring to fore part and aft part of the barge.
- Control the barge as per conditioning local channel, Chief Officer together with part of crews must in position on the barge.
- Chief Officer will give signals from Forward of Barge that barge is approaching quay.

c) Alongside of barge by tow from behind:


- Position of tugboat at after peak of barge, tie up the tros from forward of tugboat port/starboard to after of barge port/starboard.
- Next, tie up the spring port/starboard from behind of tugboat to barge port/starboard (usually use sling and portable winch).
- After tie up of all ropes strongly, the next step is to push the barge alongside port /starboard or bow alongside.
- As the bow comes alongside, the ramp door will be lowered. Tie up-bow tros of the barge port/starboard to shore and tie up the stern's rope of the barge port/starboard to shore.

C. Release after alongside

- Close the tugboat in the bow of barge and tie up the second towing that has been installed on barge and tug boat.
- After all has been installed, release-mooring rope of the barge and the tugboat will maneuver and pull the barge with slow speed as per that channel.

5.5.3 Safe handling of towing lines

When towing, it is important to stay well clear of the tow line at all time.

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When the towing line is being secured or let go, the person in charge of the mooring should monitor the operation closely to ensure that no loads comes on to the line before it is properly secured, or whilst it is being let go.

Never let go of the towing line until instructed to do so from the bridge.

If the tow line has an eye on it, heave this past the bitts so that there is sufficient slack line to work with, stopper off the line, then put the eye on the bitts. Do not try to manhandle a line on to the bitt if there is insufficient slack line. If the line has no eye and is turned up on the bitts, then it should always be stoppered off before handling it.


Do not try to hold a line in position by standing on it just because it is slack. If the line gain weight, the crew can be seriously injured.

When letting go, do not simply throw the line off the bitts and let it run out; always slack it back to the fairlead in a controlled manner, using a messenger line if necessary to avoid whiplash.

5.5.4 Manning requirement for anchoring

The following specific requirements apply when handling anchoring equipment:

- The Master must ensure that the supervision of the letting go and weighing of the anchors has been properly assigned to an experienced, competent Deck Officer, (normally Chief Officer). and only qualified seamen should be assigned to control the windlass (normally the Bosun).
- When approaching an anchorage and during anchoring the Officer in charge must ensure that the windlass controls are continuously manned to allow prompt response to Bridge orders.
- The Officer in charge must continuously monitor the direction, scope and strain on the cable during any anchoring operation and must frequently provide this information to the Bridge.
- The Officer on the Bridge must be prepared to plot the position of the anchor and the swinging area of the ship as required by the paragraph “Anchoring - Position requirement” of this section.

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5.5.5 Personal safety equipment during anchoring station

The windlass operator and all other personnel assigned to anchor station must wear:

- Safety helmet.
- Safety shoes.
- Safety gloves
- A good pair of overalls with long sleeves.

Flying fragments can injure the operator. Minor incident could distract him and set the scene for a more serious accident.

5.6 Records and References

- ISM Code § 7
- Visitors Log – Form RTG-IMS-SCF-007
- ISO 9001:2015 § 8.1
- ISO 14001:2015 § 8.1
- ISO 45001:201x § 8.1



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7 Bridge and Navigation

7.1 Introduction

To navigate safely at all times requires effective command, control, communication and management. It demands that the situation, the level of Bridge manning, the operational status of navigational systems and the ship's engines and auxiliaries are all taken into account.

Ergonomics and good design are essential elements of good bridge working practices. Passage planning is conducted to assess the safest and most economical route between points. Detailed plans are needed to ensure margins of safety and are the basis for navigation. Equipment can fail and the unexpected can happen, so contingency planning is also necessary.

7.2 Company Navigation Policy

Rocktree is conscious of its responsibilities in this field, pledges its commitment to the safety and environmental protection, placing priority on personal safety of its employees, to operate its vessels and handled cargoes in the safest manner possible. Rocktree ensures that all operations are compatible with the protection of the environment and in compliance with the applicable National and International rules and regulations.


The objectives of Rocktree's:

- Provide for safe navigational practices;
- Establish safeguards against all identified risks;
- Ensure the compliance with all applicable legal requirements; and
- Prevent any kind of incident at sea.

To achieve these objectives, Rocktree provides the necessary resources and qualified personnel, defining its Organisation, identifying specific tasks and responsibilities, establishing training requirements and co-ordinating all the tasks in order to maintain the highest safety and environmental standards.

Masters and officers in charge of navigational watch should ensure that:

- The voyage is adequately assessed and planned prior departure;
- Personnel in charge for navigational watch is sufficiently rested and in good health condition;
- Charts and publication for intended voyage are available and corrected;
- Navigational watch is maintained in accordance with the prevailing traffic condition;
- Navigational and Communication equipment is used and maintained as necessary;

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- The vessel navigates in accordance with all applicable international and local regulations;
- Any possible action to avoid accidents is taken in due time and without hesitation; and
- All company procedures and Master's instructions are effectively implemented.

7.3 Bridge Team Responsibilities

All ship's personnel who have bridge navigational watch duties will be part of the bridge team. The master as necessary will support the team, which will comprise of the officer of the watch (OOW), a helmsman and/or a look-out(s) as required.

The OOW is in charge of the bridge team for that watch until relieved.

It is important that the bridge team works together closely, both within a particular watch and across watches, since decisions made on one watch may have an impact on another watch.

The bridge team also has an important role in maintaining communications with the engine room and other operating areas of the ship.


The Master shall ensure that each OOW is sufficiently proficient in English and that he is able to understand whatever is written on charts, nautical publications, meteorological and safety warnings and other communications concerning to the vessel's operations.

7.3.1 Master Responsibilities and Authority

The Master has the ultimate responsibility for the safe navigation, including vessel's shifting within the road, of the ship at all times ensuring that the vessel is navigating in compliance with COLREG, International and local regulations.

The Master should ensure that:

- Sufficient qualified deck officers and ratings are available on board for navigation watchkeeping;
- The ship is navigating according to the company procedures and policies. In this respect, he should also ensure that the marine environment is not affected by any navigational activity;
- The passage plan has been properly appraised, assessed, planned and executed;
- All resources required and equipment (including charts, flags, publications, shapes, etc.) for a safe navigation are available on board;

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- Clear orders from the company or charterers are provided prior to departure;
- Ensure that all navigational equipment is in good working condition; and

The Master may designate a qualified deck officer to act as the Navigation Officer responsible for navigational equipment and publications and delegate him the initial responsibility for preparing the passage plan.

Furthermore, the Master shall establish the bridge Organisation and ensure that all bridge watch teams are aware of their duties and responsibilities. He shall also designate which watch Officer is to handle Radar/Collision Avoidance and which is to handle Navigation/Communication duties.

The Master shall be on the bridge in the following cases:

- Whenever the vessel is shifting from one place to another;
- When anchoring;
- When engaging a tow;
- If the vessel is due to pass in the vicinity of shoals, outlying rocks or other hazards which represent any threat to safe navigation;
- At any time, he believes conditions present a potential threat to the vessel or if he judges the vessel to be approaching a potentially dangerous situation.
- Any OOW has exceeded his hours or works and cannot be relieved by another Deck Officer.

The Master must ensure that the vessel's position is fixed when proceeding along the track as often as the situation requires. He must ensure that frequent double checks of the vessel's position are made by the different methods available to him, thus reducing to a minimum the risk of grounding or stranding.


7.3.2 Navigational Officer

The Master is to designate/delegate a qualified officer to perform the duties of navigation officer.

All Rocktree's vessels are supplied with the required and up to date nautical charts, notice to mariners, tide tables and all other nautical publications necessary for the intended ship's trade.

The navigation officer is responsible for:

- a) Passage preparation;
- b) Correction of nautical charts and publications;
- c) Testing bridge equipment; and

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d) Log book up keeping.

7.3.3 Duties of the Deck Watch Officer (UNDERWAY)

The Officer on watch is the Master's representative and is primarily responsible all times for the safe navigation of the ship and for complying with the COLREG.

As the Master's representative, the OOW is in charge of the bridge and therefore in charge of the bridge team for the watch until properly relieved.

In compliance with the company procedures and both Company and Master standing orders, the OOW should ensure that bridge watch manning levels are at all times safe for the prevailing circumstances and conditions.

The main duties of the Officer on watch include:

- **watch keeping:** maintaining a lookout and general surveillance of the ship, collision avoidance in compliance with COLREGS, recording bridge activities, making check of the navigation equipment, making the procedures for handing over the watch
- **navigation:** execute the passage plan safely, monitoring the ship's position frequently using more than one fixing method
- **radio communications:** maintain a continuous radio watch at sea with VHF radio.


The OOW should ensure that during the watch:

- the correct course is followed;
- Navigational and safety equipment is in good operational condition;
- The required activities are logged in the log book.

7.3.4 Duties of the Deck Watch Officer (AT ROAD/ANCHOR)

While the vessel is at anchor or drifting, the OOW should ensure that:

- Proper lookout and general surveillance of the vessel is maintained at all times;
- Adequate safe distance (as per par. 7.9 of this fleet instruction) is maintained from other vessels;
- Appropriate navigational lights are switched 'ON' and shapes are exhibited;

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- A continuous radio watch is maintained;
- Navigational warnings are monitored.

7.3.5 Barge Mooring and Unmooring

When barges are mooring or unmooring, the OOW should follow all manoeuvring stages Furthermore, he should:

- Monitor the weather conditions in order avoid any dangerous manoeuvring or operations;
- Ensure that the power of the tugs involved is sufficient to prevent hazardous situations (e.g. contact between the barge and the hull);
- Keep continuous communication with the Master of the OFT (by VHF)
- monitor the movement of the barge at all times and should not hesitate to contact the OFT in case an unsafe situation is developing; a
- abort the approaching manoeuvring if unsafe or too risky (e.g. angle of approaching is too high)
- Furthermore, the OOW should not allow any barge with lowered ramp (if provided) to go alongside if such a ramp can hit the OFT's hull or structures.

7.3.6 Lookout

A proper look-out shall be maintained at all times in compliance of the International Regulations for Preventing Collisions at Sea 1972 including:


- Maintaining a look-out by all available means including sight and hearing;
- Fully appraising the situation including the risk of collision and dangers to navigation; and
- Detecting hazards to safe navigation and ships/persons in distress.

The look-out must be able to give full attention to the keeping of a proper look-out and no other duties shall be undertaken or assigned which could interfere with that task.

The duties of the look-out and the helmsman are separate and the helmsman shall not be considered the lookout while steering.

7.3.6.1 Sole Lookout

The Officer on watch may be the sole lookout in day light (from sunrise to sunset) provided that:

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- a) The situation has been carefully assessed and it has been established without doubt that it is safe to operate with a sole look-out;
- b) Full account has been taken of all relevant factors, including, but not limited to:
 - State of the weather
 - Visibility
 - Traffic density
 - Proximity of dangers to navigation
 - The attention necessary when navigating in or near traffic separation schemes
- c) Assistance is immediately available to be summoned to the bridge when any change in the situation so require

The Master shall always ensure that the OOW is not excessively fatigued and fully familiar with the navigational equipment.

7.3.7 Helmsman


Master and OOW are responsible to ensure that the vessel is safely and efficiently steered. Only competent seaman must be assigned the duty of Helmsman. The OOW must ensure that on change of helmsman a proper hand-over of current orders is affected. Helmsmen must be trained to become conversant with the vessel's steering peculiarities.

7.4 Collision avoidance

In clear weather, the risk of collision can be detected earlier by taking frequent visual/radar bearings of approaching vessels to ascertain whether or not the bearing is steady and the vessel is on a collision course. Apart from Radar, bearing can be taken by using the magnetic compass.

Care however must be taken when approaching very large ships, ships under tow or a ship at close range. An appreciable bearing change may be evident under these circumstances but in fact a risk of collision may still remain.

In restricted visibility, conduct of vessel is specially covered by COLREGS. In these condition, radar, and in particular radar plotting, can be used effectively for assessing risk of collision.

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7.5 Time - Distance Saving

Time/Distance saving is secondary to safe navigation. The Master must comply with the Company's navigation policy, which places the safety of the life and safety of the vessel before any consideration of speed or economy of operation.

7.6 Safe Speed

In order not to jeopardise the safety of the ship, the officer of the watch should not hesitate to use engines to change speed on passage if the situation so requires. Whenever possible, timely notice of intended changes to engine speed should be given to the engine room.

In restricted visibility, when entering and leaving port and when proceeding in restricted waters, the master is to maintain a safe speed to prevent damage or ship exposure to dangers. Vessel is to proceed at the necessary speed for safe handling and navigation.

In restricted waters, when clearance under the keel is minimal, the master shall consider the vessel's squat (Sinkage) in relation to the manoeuvring capabilities. Speed changes may be required to avoid a collision in circumstances where ship is unable to alter course or when navigating in heavy weather condition.

7.7 CPA and Safe Distance from Other Vessels


Whether at sea or at anchorage, the Officer of the Watch (OOW) shall ensure that the following safe distance is maintained from the other vessels:

UNDERWAY AT SEA	0.5 NM
SHIFTING	0.5 NM
AT ANCHOR	0.5 NM

7.8 Watch-Standing Proficiency of Deck Officers

It is responsibility of the master to ensure that newly joined officers make themselves thoroughly familiar with standing orders, fleet instructions and navigational regulations including COLREG. OOWs should know how to set up and operate all appropriate bridge equipment.

The master should ensure that all ship's personnel who have bridge navigational watch duties are competent and skilled in all tasks and duties assigned to them.

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The positive reporting on events while undertaking tasks and duties is one way of monitoring the performance of bridge team members and detecting any deterioration in watch-keeping performance. The master must promptly take action to remedy any deficiencies by appropriately on-board training.

Ship's personnel new to ship is to receive ship specific familiarisation in all safety matters, and for those personnel that have a direct involvement in ship operations such as watch-keeping, a reasonable period of time must be allocated for new personnel to become acquainted with the equipment that they will be using and any associated ship procedures.

The Bridge Familiarisation Check List is to be completed for all new joining crew and the familiarisation process is to be verified by the master or a delegated senior officer who will sign for each item acquainted by the newly joined crew member.

7.9 Testing Bridge Equipment

Preparation for departure should be commenced as far in advance of departure as is reasonable and practicable. Reference should be made to concerning checklist and result recorded into the navigation log book. Steering Gear should be tested at least one-hour prior departure.


The following table summarize those tests and checks to be carried out prior departure.

Equipment to be tested	Tugs
Navigational lights	Yes
Radar (If installed)	Yes
Steering Gear	At least one hrs Prior Departure
GPS/DGPS and AIS	Yes
Communication Facilities incl. bridge to engine/ mooring stations communications, portable radios and VHF's.	Yes
Magnetic Compass	Yes
Echo Sounder	Yes

The 'Departure Check List' Form B003 should be completed by the Officer in charge at time of departure.

7.10 Master Standing Orders

Each Master may have his own special requirements with regard to the conduct of the watch and navigation. When take over the command, all Masters should issue their own personal standing orders. Such orders should instructions on minimum C.P.A. (Closest Point of Approach) to be

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maintained, Minimum visibility at which the Master shall be called, Minimum distance from the land, or any other special instruction and / or requirement he may have.

Master's standing orders should be written to reflect the Master's normal requirements and circumstances particular to the ship, her trade and the experience of the bridge team employed at that point in time.

Standing orders and instructions should operate without conflict within the ship's safety management system and read by all officers before the commencement of the voyage and signed accordingly. A copy of the orders should be posted on the bridge for reference and signed by each deck officer when they get familiar with them.

7.10.1 Bridge orders

In addition to standing orders, specific instructions may be needed for special circumstances. At day and night, the Master should write in the Bridge Orders Form what is expected from the officer of the watch. These orders must be signed by each officer when going on watch.

7.11 Navigational and Bridge Watches

7.11.1 Watch Conditions

Watches on vessels are established taking into account the number of Officers available on board according to the following general indications:


Master	Chief Officer	Second Officer
As and when required	06.00/12.00 18.00/24.00	00.00/06.00 12.00/18.00

Whenever required, the Master may decide to modify temporarily the above shifts. In case of prolonged change, the DPA should be informed and this Fleet Instruction amended if necessary.

7.11.2 OOW General Duties

Under the STCW Code, the Officer on watch is the Master's representative and his primary responsibility at all times is the safe navigation of the ship. He shall comply at all times with the regulations for preventing collisions at sea. (COLREG)

Notwithstanding the presence of the Master on the bridge, the Officer on watch is responsible for the safe navigation of the ship, unless the Master specifically informs him that he has taken command.

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It is especially important that the Officer on watch ensures an efficient lookout is maintained at all times. In a ship with a separate chart room, the Officer on watch may visit the chart room, when essential, for a short period for the necessary performance of his navigational duties, but he should previously satisfy himself that it is safe to do so and ensure that an efficient lookout and general surveillance of the ship, is maintained.

The Officer on watch should bear in mind that the engines are at his disposal and he should not hesitate to use them in case of need. However, where possible, timely notice of intended variations of the ship speed should be given to the Engineer on watch. He must also know the handling characteristics of the ship, including its stopping distance, and should consider that other ships may have different handling characteristics.

The Officer on watch should also bear in mind that the sound signalling apparatus and the daylight signalling lamp are at his disposal and should not hesitate to use them.


7.11.3 Taking over the navigational watch

It is the responsibility of the Officer relieving the watch to ensure that he has become acquainted with all information on the steaming situation and to understand it clearly and become orientated before relieving the Officer on watch.

The relieving Officer should ensure that also the members of his watch are fully capable of performing their duties. The Deck Officer in charge of the watch shall not hand over the watch to the relieving Deck Officer if he has reason to believe that the latter is obviously not capable of carrying out his duties effectively, in which case he should notify the Master accordingly.

The relieving Officer should not take over the watch until his vision is fully adjusted to the light conditions and he has personally satisfied himself regarding:

- standing orders and other special instructions from the Master (Master's Orders) relating to the navigation, anchorage, ship transshipment operations, etc.
- position, course, speed and draught of the ship (as applicable);
- prevailing and predicted tides, currents, weather, visibility and the effect of these factors upon course and speed;
- condition and setting of bridge equipment;
- vessels traffic situation.

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If, at any time, the Officer in charge of the navigational watch is to be relieved is engaged in a manoeuvre or taking other action to avoid a hazard, the relief of the Officer should be deferred until such action has been completed.

7.11.4 Performing the Navigational and Bridge Watch

The Officer in charge of the watch should have full knowledge of all bridge equipment and should be aware and take into account their operating limitations. Furthermore, the Officer in charge of the watch should:

- Keep the watch on the bridge;
- In no circumstances leave the bridge until properly relieved;
- Continue to be responsible for the safe navigation of the ship and towing operations (as appropriate), despite the presence of the master on the bridge, until informed specifically that the master has assumed that responsibility and this is mutually understood;
- Not undertake any duties which would interfere with the safe navigation or towing operation as applicable.
- Use all navigational equipment, helm, engines and signalling equipment if necessary
- During the navigational watch, the course steered, ship's position and speed should be checked at sufficiently frequent intervals.


7.11.4.1 Fixing the ship's position during navigation

During navigation, the OOW should:

- use more than one method to fix the ship's position (e.g. Radar and GPS or Visual Bearings)
- The position plotted by radar should be checked, if possible, by visual bearings, astronomical observation (whenever possible) or by use of other electronic fixing aids, etc.
- Positions should be obtained at regular intervals, these intervals depending on circumstances and the ship's speed. (Fixing interval in restricted or coastal water should be no more than 15 minutes and 10 minutes during river passages).

7.11.5 Course and Speed

The OOW will direct the vessel on the course and at speed that has been approved by the Master. This should not prevent the OOW from taking the most effective action that, in his judgement, may be

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necessary to avoid collisions or groundings. In such a case the Master is to be notified as soon as possible of the circumstances and the action taken. Adequate C.P.A. should be maintained at all times and taking into consideration the prevailing conditions.

Any necessary action, such as altering course or reducing speed, especially if the vessel is burdened by other vessel, shall be positive and taken in sufficient time to avoid close quarter situations, when manoeuvring; the OOW must leave other vessels in no possible doubt as to his intentions.

Whenever possible the Master shall be notified before a speed or course alteration is carried out, or so informed immediately after this action has been taken.

7.11.6 Severe weather and Speed Reduction

The OOW should monitor the weather forecast, including the sea state that may be a hazard to personnel, ship or equipment and cargo.

If expecting severe weather or rough sea, the OOW shall:

- Inform the Master and alert the Duty Engineer and all the crew;
- ensure all gear and stores are properly secured;
- weather doors and ports tightly closed and;
- the main deck is vacated.


An appropriate entry shall be made in the deck log book.

7.11.7 Weather Restrictions

The following restrictions have been set by Rocktree in order to prevent any kind of incident.

Suspension of Cargo Transhipment / Abort going alongside	Cast off from OFT
<ul style="list-style-type: none"> • Wind is more than 25 knots • Swell is higher than 2 metres • Visibility is less than 30 metres 	<ul style="list-style-type: none"> • Wind is more than 40 knots • Swell is higher than 2.5 metres

The Master may decide to deviate temporarily from the above company restrictions if according his professional judgment, the actual weather conditions do not compromise the safety and environmental standards.

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7.12 Calling the Master

The Officer on watch should immediately notify the Master in the following circumstances:

- if restricted visibility is encountered or expected
- if the traffic conditions or the movements of other ships are causing concern
- if difficulty is experienced in maintaining course
- if, unexpectedly, land or a navigation mark is sighted or change in soundings occurs
- on the breakdown of the engines, steering gear or any essential navigational equipment
- in heavy weather if in any doubt about the possibility of damage due to weather
- if the ship meets any hazard to navigation, such as wrecks
- in any other emergency or situation in which he is in any doubt.
- as specified by the Master in the Navigation preplanning or Night order book

Notwithstanding the requirement to notify the Master immediately in the foregoing circumstances, the Officer on watch should in addition not hesitate to take immediate action for the safety of the ship, where circumstances so require.

7.13 Notifying the Engine Room


The Watch Officer must notify the Engineer on watch as follows:

- When it becomes apparent that changes in speed may be required due to weather, sea conditions, low visibility, heavy traffic or whenever possible in an emergency situation.
- When entering in area or encountering situation where engine maneuvering will likely be required.
- When unusual concentration of seaweed, other marine life or shallow water which may affect water intake for engines.
- When funnel abnormally smoking

7.14 Navigation Lights

Navigational lights should be permanently switched “ON” when the vessel is underway. Alarms must be tested before leaving port and before every sunset.

Sufficient number of spare bulbs must be kept available on board each managed vessel.

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7.15 Radio-communications

The following basic principles apply to all communication carried out by radio:

- Absolute priority shall be given to distress, urgency and safety communications
- Interference with other radio users shall be avoided
- Frequencies shall be used for their correct purpose.

7.16 Entries in the Deck Log Book

A record of navigational activities should be maintained. Such activities include those concerning position, course and speed, the times and positions when passing waypoints, land or sea marks, weather and sea conditions and incidents and events including connection and disconnection of tugs, times of berthing and un-berthing, hazardous occurrences and accidents.


The Log Book must always be completed in ink. Corrections should be made with a pen strikethrough on the wrong entry. The use of liquid paper is not allowed and any alterations must be initialled.

The following non-exhaustive list can be used as guidance for the proper keeping of Bridge Log Book.

The entries should include all information required by the format of the deck log book and other additional information connected to the navigation such as:

- any alteration of course, bearings or distance from a fixed point, or latitude and longitude in ocean waters
- weather conditions with direction and force of wind, visibility, etc.
- state of sea and swell
- course being steered and any allowance for leeway, set and drift
- gyro/magnetic compass error
- distance covered by log
- engine speed and/or RPM
- details of any unusual phenomena
- The time at which the normal steaming watch type is changed to different watch types.
- any other event which, in the opinion of the OOW, may affect the safe navigation.
- All other entries as required in relevant sections of this fleet instruction book.

7.16.1 Entries in the Bell Book

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Entries in the Bell Book must include, but not limited to, the following:

- Port, date and nature of operation (i.e. arriving or departing harbour or port, anchoring, shifting in ports or anchorage), whenever maneuvering with engine stating reason for engine order when at sea under unusual circumstances (i.e. Low visibility, heavy traffic, etc.)
- the time abeam of important navigation aids which will assist in the assessment of speed and passage progress.
- time/movements of engines, OFT names and time when fasten or cast off, movements and general events relating to the progress of the passage or mooring operation.
- All orders to the engine room by the bridge telegraph except on those vessels equipped with automatic engine order printer in which case the OOW will attach the record paper from the logger, on completion of maneuvering, to the appropriate page of the Bell Book.

7.17 Navigation in coastal or restricted waters


- The largest scale chart on board, suitable for the area and corrected with the latest available information, should be used. Fixes should be taken at frequent intervals of 15 minutes.
- Whenever circumstances allow, fixing should be carried out by more than one method.
- The OOW should positively identify all relevant navigation marks and monitoring techniques such as Parallel index should be used whenever possible.
- In coastal waters the OOW should be aware of the ship's routeing schemes and reporting system
- Ship's draught, Stability condition and maneuvering characteristic knowledge is also important.
- In case of shallow waters, Squat effect shall also be taken into consideration as well as accurate tidal prediction.
- Engines must be kept on stand-by

7.18 Restricted Visibility

When restricted visibility is encountered, the first responsibility of the Officer on watch is to comply with the regulations for preventing collisions at sea. Requirements concerning the sounding of fog signals and switching on of navigation lights and the appropriate "Basic Watch Condition" are in particular to be complied with.

The Master must establish action/instruction to be followed by OOW in situation as:

- When deteriorating visibility (Visibility begins to diminish or is expected to diminish)
- When reduced visibility is suddenly encountered

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The Master should ensure that all Deck Officers fully understand his requirements for the action to be taken in above said cases of restricted visibility. In formulating the necessary action/Instruction and determining the safe visibility limits the vessel characteristics shall be taken in due consideration.

7.19 Bridge Watch Type during Navigation

Watch Type	Conditions	Bridge Team Member	Duties
A	- Little or no Traffic - Good Visibility	OOW	Collision Avoidance, Navigation, Conning
		AB	Steering or Lookout as may be required. During daylight hours may work near the bridge if readily reachable and available.
B	- Heavy traffic - Poor Visibility	Master	Collision Avoidance, Navigation, Conning
		OOW	Navigation and communication
		AB on duty	Steering
		Bosun	Lookout
C	- Heavy traffic - Very Poor Visibility	Master	Conning
		Chief Mate	Master's back up
		OOW	Navigation
		AB on duty	Steering
		Bosun	Lookout


Watch Conditions are to be set by the Master according to the actual or anticipated steaming situation. He will normally set the Watch Conditions based upon the above stated watch types, although it is within the Master's authority to modify the Bridge Organisation as he deems necessary for the safe operation of the vessel.

The watch condition set is to be clearly stated and recorded in deck log book.

Each Bridge Officer must fully understand the duties he is to perform under each watch condition and is expected to carry out those duties unless otherwise specifically instructed by the Master.

A Basic watch condition issued by the Master is to be available on the bridge.

7.20 Anchor watch

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When anchoring, a fix on the anchor drop position shall be made and the ship's swinging circle ascertained, based upon the length of cable in use. Landmarks and transit shall be selected for ease of monitoring the position of the ship as it lies at anchor and appropriate light and shape signals shall be exhibited according to the COLREG and any local regulations.

While at anchor the OOW shall maintain a check on the ship's position to monitor that the ship does not drag its anchor or move too close to any other anchored ship.

A proper Look-out must be maintained and ship inspection rounds periodically made, particularly if the ship is anchored in waters which might present a risk of attack by pirates or armed robbers.

The Master should be immediately notified if the ship drags her anchor, and if sea conditions or visibility deteriorate.

7.20.1 Precautions when the ship is at anchor

While at anchor the Master shall take such precautions as to avoid danger to the ship and personnel. These precautions shall take into account the following:

- area used for anchoring (open sea or protected area)
- main engines readiness for maneuvering
- precautions against acts of piracy
- weather forecast time intervals
- bridge and or deck/gangway attendance


The following requirements shall always be complied with:

- upon arrival at the anchorage, the vessel's position should be reported to the Port Authority or Pilot Station or to Vessel Traffic Control as appropriate.
- Bridge Watch should be maintained and Engine manned as necessary;
- Adequate watch on deck should be maintained to prevent boarding of unauthorized persons

7.20.2 Maintenance work on the main propulsion machinery when the ship is at anchor

Prior to start any maintenance on the main propulsion system, the port authority should be informed and authorization should be granted as the vessel is no able to move until the maintenance is completed.

Furthermore:

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- the Technical Department is to be informed; and
- weather forecasts should be monitored;

7.20.3 Ship Control Equipment Test

Equipment which affects the ability of the ship to manoeuvre must be fully tested in all control systems and in all modes of operation. Any alarm fitted shall be tested for proper operation and must include the following:

- Main engine Ahead and Astern
- Emergency Lighting and Power system in Control and Propulsion Spaces
- Rudder angle and RPM Indicators
- Steering Gear

7.20.4 Navigation Equipment


Navigation equipment which may be required during approach or entry port should be checked and made ready for use. Electronic equipment should be energised and tested also.

Position fixing equipment should be used to obtain a fix that can be compared to a visual fix to verify properly operation of the equipment.

7.20.5 Communication Equipment

All internal and external communications equipment must be tested to confirm proper operation and required frequencies identified. Tests must include:

- Walkie Talkies (Voice radio equipment, VHF etc.)
- Talk-back systems and Public-Address System
- Emergency Alarm
- Ship's whistle
- ALDIS Lamp

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7.20.6 Limitations on use of Cellular Phones

The use of mobile phones may compromise the attention of the Master and/or OOW, furthermore it may create confusion or interferences to bridge equipment creating potentially hazardous situations.

For the above reasons and to avoid unjustified risks to the vessel, the Company has adopted following countermeasures and Masters are requested to strictly adhere to the following requirements set by the Company:

Use of mobile phone during navigation	Not allowed
Narrow or congested waters, in restricted visibility	Not allowed
Mooring at berth	Not allowed
Mooring /Unmooring at OFT	Not allowed
At Anchor	Allowed^(*)
During cargo transshipment	Allowed^(*)
Shifting / Towing	Not allowed

(*) If not compromise the safe operations and subject to Master's decision

7.20.7 Use of Gadgets


No one is allowed to use any equipment or gadget that may distract them to perform their duties. Such equipment includes:

- Mobile phones;
- MP3 players;
- Portable TVs;
- Radios; and
- Videogames

7.21 Proper use of Radar.

Master and watch Officer on board managed vessels shall use all equipment available on the bridge.

The Master must ensure that all deck Officers have regular radar plotting practices. The time of switching ON/OFF the radar sets shall be logged in the "Radar Log" as well as other useful information.

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Radar blind sector diagram and operating instruction placard shall be posted nearby the equipment for operator easy reference.

It is the Master's responsibility to properly train deck Officers for routinely doing the diagnostic procedure. Diagnostic tests should be made every time a malfunctioning is detected, or for Officer training even if the system is in good working condition.

7.22 Bridge Posters


The following Posters (as applicable) should be placed in prominent places in the wheel-house for prompt and easy reference of the OOW and/or Pilots:

- Company Navigation Policy
- Master Standing Orders
- Basic Condition of Watch Type
- Table of Life-saving Signals as per International Code of Signals
- Radio Telephone Procedures for Receiving & Transmitting Safety/Distress messages & Frequencies including correct use of VHF channels
- Vessel main particulars (Name, Call Sign, DWT, GT, NT, Draft, etc.)
- Change over and Emergency Steering procedures
- Draught Increase due to Squat effect and Heel effect
- Propulsion Particulars (rpm - speed)
- Manoverboard Rescue Maneuver
- Turning Circles Diagrams and Stopping Characteristic (Crash Stops)
- Emergency Towing Procedures
- Radar Blind Sectors

7.23 Charts and Nautical Publications

Charts on ships have been grouped into standard folios based on the area covered by the vessel or in progressive chart's numbers. Additional charts can be ordered if the Master considers these to be necessary.

The allocation of folios to a ship will depend on the current and anticipated trading pattern of that ship. Other nautical publications will be supplied depending upon the area covered by the folio allocation. An index of charts and nautical publications is supplied to each ship to assist in keeping the charts in the correct folios.

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Notices to Mariners are sent to all ships regularly in order to keep up-date all on board charts and nautical publications. The Master must ensure that the charts and nautical publications are corrected timely. The chart corrections shall be made in ink preferably magenta ink; Pencil corrections are acceptable for a temporary or preliminary notice only.

When the chart has been corrected, the relevant correction numbers must be inserted in the space provided on the chart. Under no circumstances must the correction number be inserted if the correction has not been made.

Once all applicable corrections have been completed, the relevant Notices to Mariners booklet must be marked 'COMPLETED', signed and dated by the officer completing the corrections. The signed NTM shall then be retained for a **minimum of two years** before disposal.

Prior to sailing, the Navigating Officer will ensure that the relevant voyage charts are corrected up to date and course are laid off in accordance with the Passage Plan.

7.24 Passage Planning


The development of a plan for voyage or passage, as well as the close and continuous monitoring of the vessel's progress and position during the execution of such a plan, are of essential importance for safety of life at sea, safety and efficiency of navigation and protection of the marine environment.

The need for voyage and passage planning applies to all vessels. There are several factors that may impede the safe navigation of all vessels and additional factors that may impede the navigation of large vessels or vessels carrying hazardous cargoes. These factors will need to be taken into account in the preparation of the plan and in the subsequent monitoring of the execution of the plan.

Voyage and passage planning includes appraisal, i.e. gathering all information relevant to the contemplated voyage or passage; detailed planning of the whole voyage or passage from berth to berth, including those areas necessitating the presence of a pilot; execution of the plan; and the monitoring of the progress of the vessel in the implementation of the plan.

7.24.1 Procedure

The intended voyage must be planned berth to berth and prepared in advance, taking into consideration all pertinent information and any course laid down shall be checked before the voyage commences.

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The key elements of the Voyage Plan are:

- **Appraising** all relevant information
- **Planning** the intended berth to berth passage
- **Executing** the plan taking account of prevailing conditions
- **Monitoring** the vessel's progress against the plan continuously

Prior to proceeding to sea, the master shall ensure that the intended voyage has been planned using the appropriate nautical charts and nautical publications for the area concerned, taking into account the guidelines and recommendations developed by the Organization

In most vessels, the master delegates the initial responsibility for preparing the plan for a voyage to the qualified and experienced officer (hereafter referred to as the navigating officer.)


If the port of destination is unknown or is subsequently altered, the navigating officer must extend or amend the original plan as appropriate.

Appraisal

All information relevant to the contemplated voyage or passage should be considered. The following items should be taken into account in voyage and passage planning:

- the condition and state of the vessel, its stability, and its equipment; any operational limitations; its permissible draught at sea in fairways and in ports; its manoeuvring data, including any restrictions;
- any special characteristics of the cargo (especially if hazardous), and its distribution, stowage and securing on board the vessel;
- the provision of a competent and well rested crew to undertake the voyage or passage;
- requirements for up-to-date certificates and documents concerning the vessel, its equipment, crew, passengers or cargo;
- appropriate scale, accurate and up-to-date charts to be used for the intended voyage or passage, as well as any relevant permanent or temporary notices to mariners and existing radio navigational warnings;

On the basis of the above information, an overall appraisal of the intended voyage or passage should be made. This appraisal should provide a clear indication of all areas of danger; those areas where it will be possible to navigate safely, including any existing routing or reporting systems and vessel traffic services; and any areas where marine environmental protection considerations apply.

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Planning


On the basis of the fullest possible appraisal, a detailed voyage or passage plan should be prepared which should cover the entire voyage or passage from berth to berth, including those areas where the services of a pilot will be used.

The detailed voyage or passage plan should include the following factors:

- the plotting of the intended route or track of the voyage or passage on appropriate scale charts: the true direction of the planned route or track should be indicated, as well as all areas of danger, existing ships' routing and reporting systems, vessel traffic services, and any areas where marine environmental protection considerations apply;
- the main elements to ensure safety of life at sea, safety and efficiency of navigation, and protection of the marine environment during the intended voyage or passage; such elements should include, but not be limited to:
- safe speed, having regard to the proximity of navigational hazards along the intended route or track, the maneuvering characteristics of the vessel and its draught in relation to the available water depth;
- necessary speed alterations en route, e.g., where there may be limitations because of night passage, tidal restrictions, or allowance for the increase of draught due to squat and heel effect when turning;
- minimum clearance required under the keel in critical areas with restricted water depth;
- positions where a change in machinery status is required;
- course alteration points, taking into account the vessel's turning circle at the planned speed and any expected effect of tidal streams and currents;
- the method and frequency of position fixing, including primary and secondary options, and the indication of areas where accuracy of position fixing is critical and where maximum reliability must be obtained;
- contingency plans for alternative action to place the vessel in deep water or proceed to a port of refuge or safe anchorage in the event of any emergency necessitating abandonment of the plan, taking into account existing shore-based emergency response arrangements and equipment and the nature of the cargo and of the emergency itself.

The details of the passage plan should be clearly marked and recorded, as appropriate, on charts and in the passage plan form.

Each passage plan as well as the details of the plan should be approved by the ships' Master prior to the commencement of the voyage or passage.

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Executing

Having finalized the passage plan, as soon as time of departure and estimated time of arrival can be determined with reasonable accuracy, the passage should be executed in accordance with the plan or any changes made thereto.

Factors which should be taken into account when executing the plan include:

- the reliability and condition of the vessel's navigational equipment;
- estimated times of arrival at critical points for tide heights and flow;
- meteorological conditions, (particularly in areas known to be affected by frequent periods of low visibility) as well as weather routeing information;
- daytime versus night-time passing of danger points, and any effect this may have on position fixing accuracy; and
- traffic conditions, especially at navigational focal points.


It is important for the master to consider whether any particular circumstance, such as the forecast of restricted visibility in an area where position fixing by visual means at a critical point is an essential feature of the passage plan, introduces an unacceptable hazard to the safe conduct of the passage; and thus, whether that section of the passage should be attempted under the conditions prevailing or likely to prevail. The master should also consider at which specific points of the passage there may be a need to utilize additional deck or engine personnel.

Monitoring

The plan should be available at all times on the bridge to allow officers of the navigational watch immediate access and reference to the details of the plan.

The progress of the vessel in accordance with the passage plan should be closely and continuously monitored. Any changes made to the plan should be made consistent with these Guidelines and clearly marked and recorded.

7.24.2 Passage Planning Responsibilities

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Prior proceeding, the Master shall ensure that the intended voyage has been planned using the appropriate nautical charts and nautical publications for the area concerned, taking into account the guidelines and recommendations developed by the Organization

If the destination is unknown or is subsequently altered, the navigating officer must extend or amend the original plan as appropriate.

7.24.3 Ship Position Fixing

The ship's position is to be plotted at regular intervals depending on the prevailing circumstances. "Continuous track monitoring" is to be used. Whenever possible visual cross bearings are to be taken in preference to electronic positions.

The frequency of position fixing should be planned with anticipation and be included in the Master's instructions, together with a note reminding the need to fix the ship's position also whenever the vessel completes a turn on a new track.

The fix interval should be such that the vessel cannot be set appreciably off track or into danger by the anticipated effects of tidal stream, wind or currents in the period between fixes. The fix interval should be established by the Master and stated in the Passage Plan Form.


7.24.4 Parallel Indexing

It is a good practice to mark the planned parallel index on the chart inconspicuously at the planning stage.

The OOW has to use parallel indexing techniques to monitor the cross-track of the vessel. Parallel indexing is a particularly valuable tool approaching port and during pilotage when Master is able to continually monitor the vessel's position in this way while the OOW plots the positions obtained from other data.

7.24.5 No-Return point

When approaching constrained waters, the ship may be in position beyond which it will not possible to do other than proceed. This point of non- return is the position where the ship enters water so narrow that there is no room to return or where it is not possible to retrace the track due to a falling tide and insufficient under keel clearance.

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Whatever the reason, the passage plan must take into account the 'no-return point' that should be drawn on the nautical chart. This position may vary with the circumstances prevailing, e.g. speed, water availability, turning circle, etc. but it must be clearly shown thus the OOW can abort the passage when the ship is still in safe waters.

7.24.6 Contingency Anchorages

Anchorages or areas where the vessel could anchor in case of emergency should be identified and clearly marked on those charts used for navigation in coastal waters. Extreme attention should be paid for identification of contingency anchorages beyond the 'No-Return Point'.

7.25 Under Keel Clearance Policy

7.25.1 UKC factors


It is essential that the Master ensures that the vessel has at all stages of voyage, adequate under keel clearance. It is essential that the following factors will be taken into account while calculate UKC:

- Deepest Draft, Trim & List;
- Tide;
- Squat which varies with the speed and vessel characteristics. Fresh water allowance;
- Swell;
- Pitching and Rolling;
- Impact of previous weather conditions e.g. decrease in salinity due to heavy rain;
- Hogging – Sagging
- Nature of the depth

7.25.2 Minimum UKC

Having considered all factors as listed in § 3.6.1, the following minimum under keel clearance must be maintained:

Position	Minimum Under Keel Clearance
<i>At Berth (static condition)</i>	0.5 metre
<i>At Anchor</i>	1.0 metre

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<i>In side rivers / Harbours</i>	1.0 metre
<i>Canals & Straits</i>	2.0 metres

In case the recommended UKC cannot be maintained, the DPA should be informed and the potential risk associated to the UKC reduction should be assessed prior to proceed.

The master should never hesitate to reduce speed or to stop the vessel whenever he deems it necessary.

7.25.3 Aids to Navigation availability

Charts and Publications for the area and the latest radio navigation warning should be carefully studied to identify the aids to navigation which will be available.

7.25.4 Expected weather and Traffic Condition

Available information regarding weather or traffic in the area must be carefully considered for potential effects on the ability of the ship to manoeuvre as well as planned operations in port.

7.25.5 Cautionary Notices


All cautionary notices obtained from charts, publications or radio broadcasts must be taken into consideration when planning the port arrival and operations.

7.26 Chart and Publication Control

7.26.1 Corrections

The Master must ensure that the charts and nautical publications are corrected in accordance with Section I of the Notice to Mariners, the Mariners Handbook (NP100) Chapter 1 - and the Company's instructions. It is the responsibility of the 2nd Mate to correct all charts on board and specifically all voyage charts in a professional, neat and tidy manner.

Whenever the 2nd Mate receives a Notice to Mariners he must enter all corrections in the Chart Correction Log. When the chart has been corrected, the correction number must be inserted in the space provided on the chart.

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A line crossing out the relevant correction number inserted in the Chart Correction Log will indicate that the correction has been done.

While correcting the nautical charts and publications, priority is to be given to those charts and publications which will be used during the next sea passage and then to those charts and publications of trading area. Eventually all charts of active folios shall be fully corrected to the latest Notice to Mariners received on board.

It is important to check that the previous correction has been completed by checking that the number of the last correction has been entered on the bottom left hand corner of the chart. If not, it will be necessary to check previous Notice to Mariners. In the event that it is discovered that the chart folio has not been properly maintained in the past the Company is to be advised.


Temporary and Preliminary Notices relating to charts of the vessel are to be retained in a file or book dedicated to (T) and (P) notices. Charts affected by such notices may be corrected in **pencil** and / or the chart must be clearly marked to indicate that a (T) or (P) notice applies.

This file should be kept readily accessible on the bridge. The preferred method is to keep each T & P Notices separated into sections by area. Notices are then pasted on a chart and filed in the appropriate section. Once a notice has been cancelled it must be strikethrough. Charts affected must also have the relevant pencil correction removed as well as any remark on the chart.

The completed weekly Notices to Mariners should be retained for a minimum of three years before disposal.

7.26.2 Chart Correction Log and Publications index

The chart correction log must also be kept updated and the chart correction list supplied by the appropriate chart supplier will at times contain corrections for this. These changes can affect both the chart and publication list. Changes to the chart list must be entered in both the folio section and the numerical list. These corrections are normally issued annually.

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7.26.3 Cancelled Charts and Publications

When a chart is cancelled the word “cancelled” is to be written on both sides of the chart. Same chart shall than be removed from the bridge. The obsolete chart must be retained on board until the new edition is received and used for navigation only if the new chart is not yet received. in case of urgent need only.


7.27 SQUAT Effect

When Navigating in Channels or restricted depth, the effect of increased draught due to squat must be taken into account. It is to be borne in mind that this effect will increase with speed is greater when the channel is also restricted in breadth.

Squat is the bodily sinkage of a ship in the water when making headway. The squat effect will depend upon several factors but in certain conditions may be as much as two metres. This may lead to grounding, loss of steering or collision.

Factors governing the ship squat are:

- Ship’s speed (Main Factor). Squat is directly approximately proportional with the speed squared.
- Depth of water: inversely proportional.
- Confines of the channels. Inversely proportional.
- Block Coefficient (ratio of the immersed volume of the ship relating to the water line length, breadth and draft): directly proportional.
- Blockage Factor (immersed cross-section of the ship’s Midship section divided by the cross-section of the canal or river): directly proportional.

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Block coefficient

$$CB = \frac{\text{Vol. Of Displacement}}{L \times B \times D}$$

This formula can be used as guidance when calculating squat. Note however that every vessel is different and characteristics do change from ship to ship.

Open water

$$SQUAT_{max}(m) = CB \times \frac{V^2}{100}$$

Answer is in metres, where Cb is the vessel's block co-efficient and V is the ships speed in knots.

Confined water

$$SQUAT_{max}(m) = 2 \times CB \times \frac{V^2}{100}$$


7.28 Vessel's Position Reporting

The following reports should be forwarded to Operations Department and Technical Department

7.28.1 Noon and Arrival Position

The following information shall be reported at 12.00 ship's local time daily.

AA	DATE (DD-MM-YYYY)				
BB	POSITION	LAT:		LONG:	
CC	PRESENT COURSE				
DD	DISTANCE RUN (FROM LAST NOON)				
EE	SAILING TIME				
FF	M/ENGINE RPM				
GG	AVERAGE SPEED (FROM LAST NOON)				
HH	AVERAGE SPEED (FROM DEPARTURE)				
JJ	WIND (DIRECTION AND FORCE)	FORCE		DIRECTION	
KK	SEA (DIRECTION AND FORCE)	STATE		DIRECTION	
LL	DISTANCE TO GO (PILOT STATION)				
MM	ETA (PILOT STATION)	DAY		LOCAL TIME	
NN	DIESEL OIL CONSUMPTION	LAST 24 HRS		FROM	
OO	M/ENGINE CYL OIL	CONSUMPTION		ROB	

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PP	M/ENGINE CRANKCASE OIL	CONSUMPTION		ROB	
PP	AUX ENG CRANKCASE OIL	CONSUMPTION		ROB	
QQ	OTHER INFORMATION (IF ANY)				

7.29 Records and References

- Deck Log Book
- Weather forecasts
- Bell Book
- Basic watch Condition
- Radar Log
- COLREG
- Bridge Familiarization – Form RTG-IMS-BRF-001
- Bridge Check Lists - Form RTG-IMS-BRF-002 to RTG-IMS-BRF-011
- Master’s Bridge Orders - Form RTG-IMS-BRF-013
- ISO 9001:2015 § 8.1
- ISO 14001:2015 § 8.1
- ISO 45001:201x § 8.1



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RECORD OF AMENDMENT

Date of Revision	Section	Brief Description of Amendments	Rev. No.

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6 Engine Room Operations

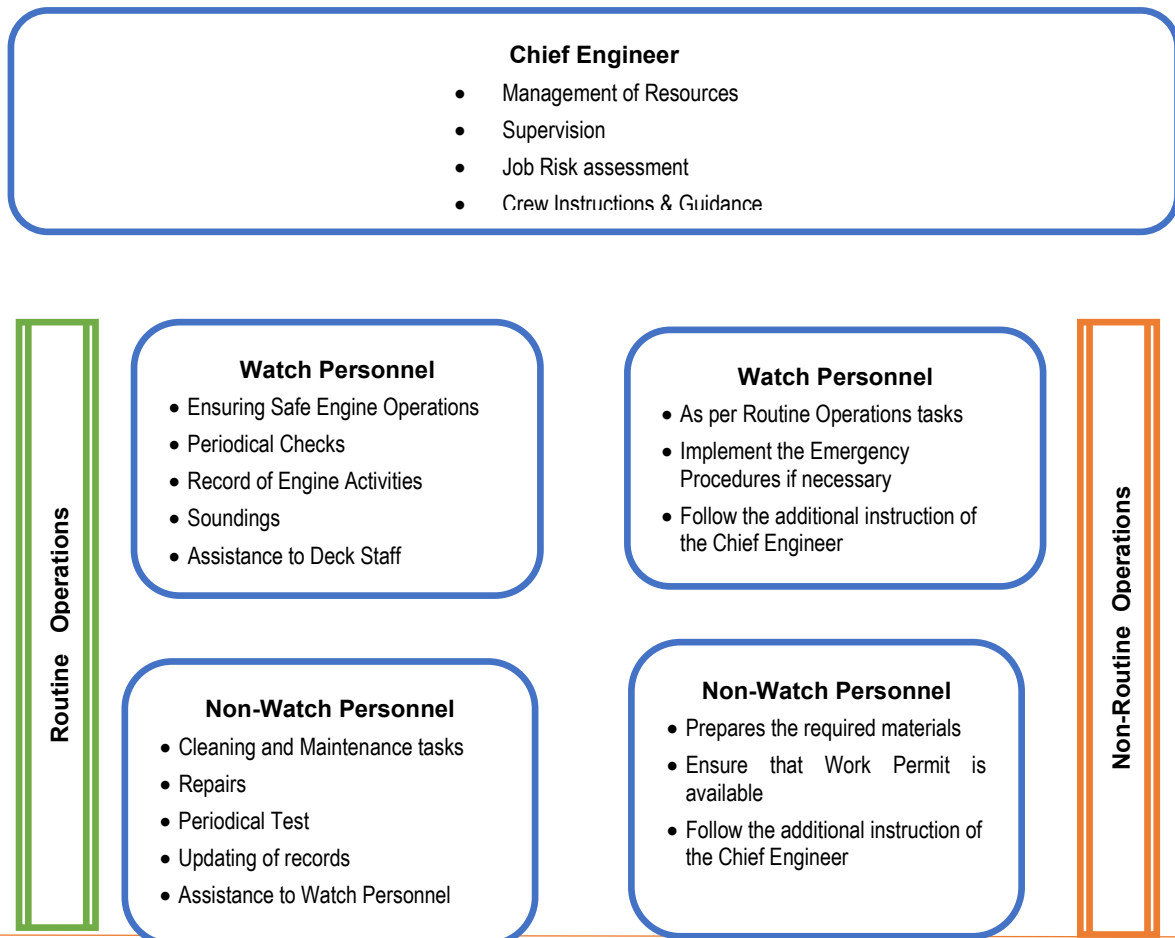
6.1 Purpose and Scope


The present instruction has been purposely issued to RTG managed vessels to provide the crew guidelines for efficient and safe engine operations.

One of the main purpose is to manage the running and maintenance activities related to the machinery, in particular regarding redundant machineries, so as to maximise their availability and allow for safe and uninterrupted operations.

6.2 Engine Room Organization

According to RTG Policy, the Engine Room should be organized as per the following diagram:



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6.3 Responsibilities and duties

The **Chief Engineer** is responsible for the proper execution of orders from Bridge and orders relating to engine movements, power generation and ballast handling (where applicable).

- The **duty Engine Officer** shall assist the Chief Engineer as necessary and he shall maintain the record of all engine activities;
- The **Oiler** shall assist as directed by Chief Engineer or by the Engineer on Duty.

Full duties & responsibilities are detailed in Fleet Instruction 1 'Shipboard Organization'.

6.3.1 Duties of the Engine Officer on watch

Duties of the Engineer on watch (EOW) are to be in accordance with the international convention STCW and national rules and regulations.


The Engine Officer in charge of the watch is the Chief Engineer's representative and his primary responsibility is the safe and efficient operation of the machinery affecting the safe operation of the vessel. He shall ensure that bridge orders concerning to the use of engines, thrusters, etc. are immediately implemented.

The Engine Officer in charge of the watch shall also ensure that adequate tours of the engine room and steering gear spaces (where applicable) are made for the purpose of observing and reporting equipment malfunctions or breakdowns.

The Engine Officer in charge of the watch continues to be responsible for machinery space operations even in the presence of the Chief Engineer in the machinery spaces unless the Chief Engineer informs him specifically that he has assumed that responsibility.

6.4 Engine Room Watches

Watches on vessels are established taking into account the number of Engine Officers available on board according to the following general indications:

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Engine Staff	Chief Eng.	2 nd Eng.	3 rd Eng.
Full Engine Officers Staff	Daywork Standby	06:00 – 12:00 18:00 – 24:00	00:00 – 06:00 12:00 – 18:00

6.4.1 Taking over the watch

The relieving Officer on watch shall ensure that all the members of his watch are fully capable of performing their duties.

The Engine Officer in charge of the watch shall not hand over the watch to the relieving Engine Officer if he has reason to believe that the latter is obviously not capable of carrying out his duties effectively, in which case he should notify the Chief Engineer accordingly.

The relieving Engine Officer should be informed by the relieved Officer about:

- vessel's systems and machinery
- work being performed on machinery and systems and potential hazards.

6.4.2 Bridge notification


The Engine Officer in charge of the watch shall immediately notify the bridge in the event of fire, incident or failure of those machinery which may affect the:

- the propulsion and speed of the vessel (where applicable);
- the safety and pollution prevention; and
- any alteration in the generation of electric power.

These notifications, where possible, should be made before consequences occur, in order to give the bridge, the maximum available time to take whatever actions are possible to avoid a potential marine casualty

6.4.3 Engine-room Manning in Restricted Waters

The presence of the Chief Engineer in the Engine room, when the vessel is performing particular operations (including, shifting, docking or un-docking, or passing through restricted waterways) is required.

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6.4.4 Calling the Chief Engineer

The Engine Officer in charge of the watch should take immediate action for the safety of the vessel, machinery and crew where circumstances so require.

The Engine Officer, while in charge of a watch, shall not be assigned nor undertake any task or duty which would interfere with his supervisory duty in respect of the vessel's machinery system.

The Engine Officer in charge of the watch shall immediately notify the Chief Engineer in when:

- a breakdown, damage or failure of any machinery,
- environmental pollution accidentally
- in emergencies or in situations when he is in doubt as to what decision or measures to take.

The duty engineer must call the Chief Engineer at any time if he is in doubt. This includes variations to the operational parameters of machinery or matters related to safety. The duty Engineer must take immediate action for the safety of the ship.

6.4.5 Maintenance of machinery and equipment during the watch


The Engine Officer in charge of the watch should co-operate with any Engine Officer in charge of maintenance or repair work always taking into consideration points as above. This should include but not necessarily be limited to:

- isolating and bypassing the machinery to be worked on and adjusting the remaining plant to function adequately and safely during the maintenance period
- testing and putting into service, where necessary, the repaired machinery.

6.5 Chief Engineer's Standing Orders

On joining a ship, the Chief Engineer must write his own standing orders. These are complimentary to the company's standing orders. The Chief Engineer must address additional requirements for shipboard safety, ship security and all engine and deck machinery operations in his additional requirements. Display the Chief Engineer's additional standing orders in the engine room.

The Chief Engineer issues standing orders so that, during his absence from the engine room, the Engineer on watch has no doubts about his responsibilities and the actions to be undertaken.

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The Chief Engineer Standing Order shall be posted in Engine Room for easy consultation by the Engineer on watch. The Standing orders must be read and understood by all watch-keepers and then signed at foot for acknowledgement.

In addition, the Chief Engineer has to write down specific orders in his *“Chief Engineer Night Order Book”* which is to be filled on daily basis and countersigned by all watch-keepers.

The Chief Engineer Standing Orders shall contain at least, but not limited to, instructions covering following topics:

- Normal and routine machinery’s operating orders;
- Precautionary measures to prevent hazardous situations to the safety and environment;
- Notices and reporting matters;
- Emergency instructions in case of failure of machinery; and
- Safe working practices to be observed in engine room.

6.6 Night Orders


In addition to standing orders, specific instructions may be needed for special circumstances. At night, the Chief Engineer should write in the Night Order Book what is expected from the Engineer of the watch. Each Engineer must sign these orders when going on watch or on duty.

6.7 Watch Standing Proficiency of Engineers

To ensure proper familiarisation with all machinery fitted on board, the Company established a dedicated *“Engineer Familiarization Questionnaire”* (C006). The newly joined Engineer shall fill and sign said form within one months after joining and deliver it the Chief Engineer who has to examine the questionnaire and identify eventual extra training need (if any).

When the need for extra training in a specific field is identified, Chief Engineer shall act accordingly to ensure the highest level of familiarisation of the new Engineer.

Once completed the questionnaire should be filed and retained on board for **at least 2 years**. Purpose of the *“Engineer Familiarization Questionnaire”* (C006) is to make the Officer familiar with the vessel and relevant equipment.

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6.8 Cleanliness and Housekeeping

The engine room and all machinery spaces are considered 'high risk working areas' due to the presence of several hazards, including the hot surfaces, pipes under pressure, combustible liquids (e.g. fuels and oils), etc. for this reason, a high standard of cleanliness and housekeeping should be maintained at all times.

As good practice, the Chief Engineer shall ensure that:

- Floor plates and surfaces are free of oil;
- Oil, water and fuel leaks are fixed as soon as noticed or reported;
- Spare parts, heavy parts, lube oil drums as well as chemical drums are properly stowed and secured;
- All external doors are closed and proper filters are placed (and re-placed when necessary) on ventilation ducts thus to avoid the ingress of dust;
- Rubbish, oily rags, paints and thinners are removed if not used;
- Soaked insulation is replaced as soon as the oil leak has been fixed; and
- Bilges are free of excessive oily water.

6.9 Handling Machinery


No unauthorised person must operate machinery. The only authorised persons who may handle machinery are vessel's engineers or authorised service engineers.

Only a certified engineer officer may be in the engine room alone if there is a lack of manpower. Ratings must not hold watch alone in the engine room.

6.9.1 Standby

When the engine room is on stand-by, the duty engineer officer in charge of the watch has to keep all machinery and necessary equipment in a state of immediate readiness. Adequate spare power for deck machinery and any other relevant equipment must be available. The following equipment must be operating with standby units ready for immediate operation:

- Main engine – ready to manoeuvre
- Auxiliary engines
- Steering motors

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- Pumps

The Master or OOW will advise when Engine room is to be on standby.

As guidance, in the following situations, Engine room will be required to operate on Standby status:

- At all times within a harbour, river or sea pilot on board
- Geographic locations with high traffic density
- Heavy traffic density locations such as when manoeuvring in the river
- Coastal areas where traffic routing is in force

6.10 Outfit

Tool, spanners, spare gear, lifting tackle, etc., shall be kept clean and in good order, and stored in proper places. Valuable gear must be kept locked up. Machined wrought iron and steel surfaces, valve covers, brass flanges, copper pipes, etc., are to be polished as far as possible. All cleaned parts are to be kept free of paint, given a thin coat of varnish and cleaned with paraffin as required. The lagging on the steam and feed pipes is to be coated with white water paint.


As little paint, as possible should be used on auxiliary machinery; a coating of thin paint may be applied where it is likely to be enduring and not defaced during overhauling. Valve spindles, glands, grease connections, nameplate, etc., must be maintained free of paint.

All insulation where not cleaned is to be painted with a white-water paint only.

6.11 Preservation of Spare Parts and Materials

Spare parts and materials shall always be protected with suitable material or stowed in appropriate store/location.

Type of spare part or Material	Preservation and Storage
Electrical motors, valves, pumps, electrical components and sensors, actuators, propeller shafts, filters, safety equipment	Dry place or locker, protected by potential spray of water, sunlight and dust.
Covers, pipes, gratings,	Machinery spaces or alternatively on open decks providing that they are well varnished, secured on wooden beams and covered by suitable material (e.g. canvas).

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Lube Oil drums	Open decks covered by suitable material (e.g. canvas) which prevent the accumulation of dust. If dirt or dust is accumulated on top of the drums, it should be washed out prior to open, transfer or use the lube oil.
Chemical Drums	Well ventilated and dust-free area.

6.11.1 Spare Parts Records

An accurate record of spare parts shall be maintained up-to-date.

6.12 Sequencing of Diesel Generators

Diesel Generators provide the power required by the vessel to operate all on-board machineries and systems. It is necessary to implement a correct sequencing of the Diesel Generators in to ensure smooth and safe operations and to schedule maintenance conveniently.

In order to conserve energy, diesel generator should be used only as and when necessary. In the day time, the load on the generator can be reduced by turning off all the lights in the accommodation. In anchorage, turning off all non-essential equipment. In such cases, running one diesel generator may be sufficient.

6.12.1 Lubricating and Hydraulic Oil


Maintain minimum reserve as follows:

- One complete change of system oil for the Main Engine
- Minimum two charges of system oil for alternator engines
- One complete charge of hydraulic oil for the mooring winches
- One complete charge of hydraulic oil for the steering gear

6.12.2 Sequencing after Overhauling or Major Maintenance Activities

In case of the Master Main Diesel Generator being overhauled or only other Main Diesel Generator being subject to major maintenance activities, whatever the reason, the sequencing should be updated as follows:

- The Main Diesel Generator subject to overhaul or major maintenance is downgraded to Off-line Diesel Generator.

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- The Main Diesel Generator with the highest number of running hours from the last overhaul becomes the Master Main Diesel Generator.
- The other Main Diesel Generator becomes Stand-by Main Diesel Generator.

6.12.3 Sequencing after Minor Maintenance Activities

In case the Master or the Stand-by Main Diesel Generator being subject to minor maintenance the Off-Line Main Diesel Generators shall be temporarily upgraded to Stand-by.

At the end of the minor maintenance activities the sequencing priority shall be reassessed as per 6.12.4.

6.12.4 Running

Whenever the tug is not on load (not towing), the Chief Engineer should use only what is sufficient to power the essential. In this case, if one generator is sufficient to power all the essential such as navigation system, reirrigation system, etc. then the Chief Engineer should endeavour to use only one generator.

Likewise, if one main engine is sufficient to maintain a reasonable speed, the Master should endeavour to use only one main engine for manoeuvring to prevent excess and wastage of fuel. However, the other main and auxiliary engines must be on standby and ready for use should they be required.

6.12.5 Sequencing after Overhauling or Major Maintenance Activities

In case of the Master Diesel Generator being overhauled or being subjected to major maintenance activities, whatever the reason, the sequencing should be updated as follows:


- The Master Diesel Generator is downgraded to Off-line Diesel Generator.
- The Off-line Secondary Diesel Generator becomes the Master Diesel Generator.

Likewise, for the main engines, if the Master main engine is being overhauled or being subjected to major maintenance activities, whatever the reason, the sequencing should be updated as follows:

- The Master main engine is downgraded to Off-line main engine.
- The Off-line Secondary main engine becomes the Master main engine.

6.12.6 Sequencing after Minor Maintenance Activities

In case the Master Diesel Generator being subject to minor maintenance the Off-Line Secondary Diesel Generators shall be temporarily upgraded to Master.

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At the end of the minor maintenance activities the sequencing priority shall be reassessed as per 6.12.8.

6.12.7 Maintenance Precautions

Regardless of the Sequencing scheme all engines shall be started up routinely to ensure circulation of the fluids, to avoid stagnation, deposits and other nuisances. It is advised that engines are started up and kept running as per the following table, which is based on the Maximum Continuous Rating of each engine cylinder, in kW.


Cylinder Power [kW]	Minimum Start Up Frequency	Minimum Running Time
Power \geq 250	Once every two days	10 minutes
100 \leq Power < 250	Once every three days	10 minutes
50 \leq Power < 100	Once every four days	10 minutes
Power < 50	Once every five days	5 minutes

For the engines installed on board RT Vessels the following applies.

Engine Type	Minimum Start Up Frequency	Minimum Running Time
Wartsila 26	Once every two days	10 minutes
Cummins KTA 50	Once every four days	10 minutes
Cummins KTA 19	Once every five days	5 minutes
Emergency Generators	Once every five days	5 minutes
Mitsubishi S6R2	Once every day	5 minutes
Yanmar 6RY17P	Once every day	5 minutes
Hyundai G6DI	Once every day	5 minutes
Volvo Penta	Once every day	5 minutes

Whenever possible and as far as practical, all engines, before start up, shall be duly pre lubricated and subject to slow turning for about two minutes.

For warranty purposes, after overhaul or major repairs, engines shall be run for a minimum of 250 running hours before standard sequencing is reinstated.

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6.13 Sequencing of Redundant Ancillary Machineries

Ancillary Machineries, such as pumps, filters, compressors provide services necessary for the operation of vessels. Also, Ancillary Machineries shall be duly sequenced to ensure smooth and safe operations and to schedule maintenance conveniently.

Sequencing Priority

The sequencing of each redundant Ancillary Machinery shall be made according to a Master / Off-line priority:

- The Master Machinery is the one with the highest number of running hours from the last overhaul.
- The Off-line Machinery is the one with the least number of running hours from the last overhaul.

6.13.1 Running

The Running of redundant Ancillary Machinery shall be as follows:

- In all situations in which the Machinery is to be run, the Master Machinery shall be run.
- The Off-line Machinery shall be run, only in case one of the Master Machinery is put out of service for maintenance.

6.13.2 Sequencing after Overhauling or Major Maintenance Activities


In case of the Master Machinery being overhauled or being subject to major maintenance activities, whatever the reason, the sequencing should be updated as follows:

- The Master Machinery is downgraded to Off-line Machinery or.
- The Off-line Machinery becomes the Master Machinery.

6.13.3 Sequencing after Minor Maintenance Activities

In case the Master Machinery being subject to minor maintenance the Off-Line Machinery shall be temporarily upgraded to Master.

At the end of the minor maintenance activities the sequencing priority shall be reassessed as per § 6.13.

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6.13.4 Maintenance Precautions

Regardless of the Sequencing scheme all machineries shall be started up routinely to ensure correct lubrication and circulation of the fluids and to avoid stagnation, deposits and other nuisances. In particular, it is advised that all machineries shall be started up once per week and kept running for about 5 minutes.

Whenever possible and as far as practical, all machinery, before starting up, shall be duly checked for correct lubrication and greasing.

For warranty purposes, after overhaul or major repairs, machinery shall be run for about 250 running hours before standard sequencing is reinstated.

6.14 Testing and Running in of Renewed, Overhauled or Serviced Machinery

All renewed, overhauled or serviced machineries and components must be properly tested and run-in so as to ensure the effectiveness of the maintenance operations, to mitigate the risk of infancy or maintenance induced failures when in operations and to ensure that any applicable is actually claimable, if case be.

For such reason all renewed, overhauled or serviced machinery must be immediately put in operation and run for a least 200 running hours before being subject to the sequencing principles established in 6.12 and 6.13.

During such running-in period the machinery shall be duly tested monitored as far as practical with the means present on-board (e.g. by checking performances, temperature, vibration, noise...). Any suspect or unexpected occurrence shall be immediately reported to the C/E and by the C/E to the Superintendent.


6.15 Fuel - transfer and separation

6.15.1 Bunkering Plan

Prior to each bunkering operation, the Chief Engineer should ensure that all involved personnel is briefed on transfer arrangements and safety precaution and that a detailed "*Bunker Transfer Plan*" is prepared. Such a plan shall be brought to the attention of all involved personnel. The Bunker Transfer Plan shall indicate also the name and responsibilities of personnel in charge of bunkering as well as instruction for safe handling.

Note: Display the maximum loading rates as per bunker loading plan in Bunker station.

Ensure fuels provided follow the charter party terms and MARPOL annex VI. Inform the technical department and charterers if fuel off specification.

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NOTE: This applies for loading fuel and lubricant bunkering

Include the below points when planning bunker operations:

- a) Loading plan prepared including duties and responsibilities for personnel assigned. Including:
 - a. Frequency of Sounding
 - b. Person nominated to carry out sounding
- b) Calculation of loading rate and expected time of completion
- c) Bunker training conducted within the last 48 hours. This must include relief and on-going personnel
- d) Bunker checklist completed. Frequencies for repetitive checks must be agreed
- e) Rest hour compliance
- f) Engine room manning level
- g) Pre-Transfer conference including items listed in the bunkering checklist
- h) MSDS received from supplier
- i) Fire precautions (No smoking, no naked lights)
- j) Equipment for cleaning up minor spillage in place (sawdust, absorbents, rags, etc.)
- k) Sampling procedure
- l) Complete oil Record and Engine Log book entries


6.15.1.1 Pre-Bunkering Meeting and training

Conduct training within 48 hours prior to bunkering. This must include the following:

- Each person's bunkering responsibilities are assigned and understood
- Sounding frequency during bunker operation
- Watch keeping requirements are agreed between Chief Engineer and Chief Officer or Master
- Discussion of pre-loading plan with all involved crew
- Awareness of criminal penalties and liabilities for oil spill
- Agree emergency shut down procedures
- Use of gas detection equipment for checking H₂S and Benzene content
- Sampling procedures

6.15.1.2 Pre-loading plan

The bunkering pre-loading plan must identify and record the following:

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- Identification, location and capacity for each nominated tank
- Contents and grade in each bunker tank
- Calculate estimated final sounding in each nominated tank
- Sequence of nominated tanks to be filled
- Initial loading rate
- Maximum loading rate
- Topping off rate
- Responsibility of personnel
- Special instructions
- BDN in compliance with Marpol Annex VI

6.15.2 Bunkering Check list

Prior to commencement of each bunkering operation, the Chief Engineer is responsible for the completion of the “*Bunker Check List*” after making sure that all the listed items have been carefully checked. Once completed copy of the check list should be attached to the bunkering plan.


In case of vessels fitted with High Level Alarm in bunker tanks, the Company strongly requires that it is maintained operational at all time while taking bunker and / or during internal transfer. Furthermore, the Chief Engineer shall agree all required transfer terms and check jointly with the supplier (barge or terminal) all items as listed in the ‘*Bunker Operations Check List*’. Such a check list shall be signed by both, vessel and barge/facility representative.

6.15.3 Oil Record Book

On completion of each bunkering operation and various operations in Engine Room a proper entry is to be made in the Oil Record Book Part I following the guidance given by MEPC.1/Circ.736 Guidance for The Recording of Operations in The Oil Record Book Part I - Machinery Space Operation.

As general practice, the Chief Engineer shall ensure that:

- Operations are recorded in the same chronological order they have been executed on board;
- Dates are entered in dd-MONTH-yyyy format, e.g., 20-SEPT-2013:
- Landing ashore of oily garbage and used filters should be recorded in the Garbage Record Book only;
- All Entries are to be made and signed by the officer or officers in charge of the concerned operations and each completed page shall be signed by the master;

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- No entirely empty lines are left between successive entries;
- If a wrong entry has been recorded in the Oil Record Book (ORB), it should be immediately struck through with a single line in such a way that the wrong entry is still legible;
- The wrong entry should be signed and dated, with the new corrected entry following;
- Bunker / Bilge / Sludge tank nomenclature should be recorded as per the format noted within the International Oil Pollution Prevention Certificate (IOPP); and
- Bunker Delivery notes as well as receipt of bilge / sludge are collected and made readily available.


Bunker Delivery Note

MARPOL Annex VI Regulation 18 (4) requires that the bunker delivery note shall be kept on board the vessel in such a place as to be readily available for inspection at all reasonable times. It shall be retained for a period of **three years** after the fuel oil has been delivered on board. The bunker delivery note should contain at least following information:

- Name and IMO number of the receiving vessel
- Port of bunkering
- Date of commencement of delivery
- Name, address, and telephone number of marine supplier
- Product name (Fuel Grade)
- Quantity in MT
- Density at 15° C (kg/m₃)
- Sulphur Content (% m/m)
- A declaration signed and certified by the fuel supplier's representative that fuel oil supplied is in conformity with regulation 14 (1) (*Sulphur Content max 3.5 %*) or (4) (a) (*Max Sulphur Content 1.0 % for those vessels trading in the Baltic Areas*) and regulation 18 (1) of the Annex VI of MARPOL 73/78.

6.15.4 Bunker samples

Bunker samples must be obtained from the suppliers. The samples shall be sealed and signed by the supplier's representative and the Master or Officer in Charge of the bunker operation on completion of bunkering operations and retained under the vessel's custody until the fuel oil is substantially consumed, but in any case, for a period of **not less than 12 months** from the time of delivery as requested by MARPOL Annex VI Regulation 18 (6).

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Samples shall be labelled with date, place and grade and must be stowed in a safe place outside the accommodation, in a well-ventilated place away from ignition and / heating sources or any other hazardous area. Under no circumstances samples shall be stowed within the accommodation or in engine room. Bunker sample locker / cabinet should be watertight, fitted with drain and air vents and it must be fitted with a padlock to prevent that sample bottles can be used to fabricate rudimental bombs.

6.15.5 Storage and settling

Fuel oil is embarked in appropriate storage tanks and/or double bottoms and is periodically transferred by means of specific piping and pumps to settling tanks where, it is left to settle for a sufficient period of time. From the settling tanks, the fuel is sucked and mechanically separated from water and sediment and delivered to daily tanks where it may be used for supplying engines.

The following instructions and precautions are always to be adopted:

- Storage in tanks and double bottoms:
- Check periodically tank level to ascertain the integrity of compartments.
- Check periodically tank vents to ascertain the conditions of fire screens

6.15.6 Marine Diesel Oil

This fuel requires very little pre-burning preparation. The service tanks should be tested for water content at frequent intervals and particularly when a new batch of fuel is received in the tanks.

6.15.7 Minimum Fuel Quantity to be stored on board


Fuel for the intended voyage may be supplied by the Company or by the Time Charter.

In case of anomalies, the Operation Department or Charter is to be immediately requested to provide for additional fuel or for refuelling at the nearest facility.

Fuel oil sediments shall always be taken into account when establishing the quantity of fuel to be loaded.

6.16 Lubricating Oil

Lubricating oil is supplied to each vessel in accordance with the terms and conditions agreed with the approved suppliers. The suppliers issue specific instructions pertaining to the care and maintenance of their particular system oils. These instructions are to be carefully read and followed by all Engineers.

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6.16.1 Medium Speed / High Speed Trunk Piston

Oils for these engines will contain detergent additives; they are not suitable for water washing. They do however benefit from dry purification.

6.16.2 Lubricating Oil, Hydraulic Oil and Grease Samples and Analysis

To the purpose of preventing failures or malfunctioning of machinery and systems, periodic analyses of hydraulic and lubricating oil are to be carried out. Oil and grease Samples are to be collected at least every 4 months and at each oil charge renewal, duly labelled with the identification of the machinery and the total running hours, and sent Ashore for Laboratory Analysis:

Machinery	Sample Frequency
Main engine Oil	Every 4 Months
Auxiliary Engines Oil	And at each Charge Renewal
Stern Tube Oil	see Note


NOTE: in case the oil charge of a given piece of machinery is renewed more frequently than once every 4 months (as it is in general the case for Crane Gearbox Lubricating Oil and for High Speed Diesel Engines). Oil sampling and laboratory analysis are not required.

Results of the analysis carried out in shore laboratory are received by the Technical Department that will send copies to the concerned vessel. In case of abnormal values, the superintendent in charge will suggest the most appropriated corrective action asking the Chief Engineer to confirm once action had been taken.

The reports containing the results of the above-mentioned analysis are kept in the files of the Technical Department ashore and by the Engine Department on board vessel.

6.16.3 Disposal of Used Oils

Oils that are no longer suitable for further use must be disposed in accordance with the relevant regulations. They can be burned in the incinerator (if fitted), or mixed with fuel oil at no more than 1% concentration, or discharged or at shore facilities. Such disposal must be recorded in the Oil Record Book part I.

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6.17 Bilge & Sludge

Bilge must be kept dry and oil free at all time. Bilge containing oil and residues represent a high fire hazard that is to be avoided.

A bilge high level alarm is fitted on all managed vessels as safety device to prevent flooding. Such bilge alarm shall be tested at regular interval and results must be recorded in the proper Company's form.

Engine's staff must endeavour to eliminate leaks that may produce accumulation of water or oily waters in to the bilge. Water, oily water and sludge should be disposed off in accordance with the relevant regulations. Disposal of bilge oily waters and sludge must be recorded in the dedicated section of the Oil Record Book part I.

6.18 Handling, Precaution and Storage of Hazardous and Toxic Products

Dedicated locker for hazardous and toxic products should be provided. On those vessels where such locker is not available and products are stowed in a shelf within a compartment, save-all shall be provided underneath and containers must be stowed on wooden platform and properly rigged.

Cautionary notice shall be placed at the entrance door of the locker. Proper inventory should be kept and updated regularly. Stock check should be carried out regularly to prevent excessive requisition causing insufficient storage. Always exercise caution when transporting containers carrying hazardous and toxic products.

Material Safety Data Sheets (MSDS), Protective Clothing (Goggles, Aprons, Gloves, eye wash etc.) must be available nearby. Storage of hazardous and toxic products outside the dedicated spaces is absolutely prohibited.

6.19 Machinery Spaces


6.19.1 General

6.19.2 Duty Engineer

Duty Engineer must be available at all time and easily reachable by the deck officer on watch, for this purpose he has to inform the bridge when he has intention to leave the engine room.

Prior to descend in the machinery space the engineer on duty shall:

- Inform the Officer on watch on the bridge indicating reason for descending and expected time of stay in engine room.
- Agree the working channel to be used on the VHF portable radio.

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- Bring the portable radio with him and test it prior to enter making sure battery is fully charged.
- Dress properly.

Confirmation must be given to bridge when he returns from the Engine Room.

The Officer on watch on the bridge shall note time of entering and time of exit.

In case, the engineer on duty does not call the bridge, to confirm his return at the expected time, the Officer on watch on the bridge shall try first to contact him on the portable radio or by telephone and if does not successes, he should not hesitate to inform the Chief Engineer and the Master.

If he has to stay in engine room for longer than expected, he has to inform the bridge.

6.19.3 Duty shift

The Chief Engineer shall establish duty cycles which will include only certified Officers.

The Engineer on duty must always have sufficient hours of rest without a break.

6.19.4 When the engine room is unattended


- in the case of an alarm, the Engine Officer on duty shall verify the cause of alarm and take the necessary measures to avoid repetition. In case of need he may call other Engine Officers

6.19.5 When manoeuvring and in hazardous situations

During manoeuvring and in hazardous situations (such as restricted visibility, ice traffic areas, etc.) where an unexpected manoeuvre may occur, at least one Engine Officer with adequate qualifications according to STCW and an assistant are to be present in the engine room so that manual control of the main engine can be immediately operated if the remote-control system of propulsion fails.

6.20 Reporting Equipment Deficiencies

Any deficiency, failure or breakdown to equipment or machinery should be immediately reported according to fleet instructions 8 'Maintenance and Reliability' and Fleet Instructions 14 'Accident and Near Miss Reporting'.

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6.21 Vessel's speed and course in hazardous situations

In the event of hazardous situations such as:

- risk of collision
- adverse weather
- restricted visibility
- high traffic density
- other hazardous situations

the vessel's speed shall be adjusted to allow a safe manoeuvring margin also in case of failure of the main engine and steering gear.

In particular, the following precautions are to be taken:

- a continuous watch in Engine room is to be kept
- a qualified Engineer shall be ready at all times to take over the emergency steering control
- the main engines shall be ready for immediate manoeuvring
- a standby generator is to be started and connected to the main switchboard


When restricted visibility is encountered, the first responsibility of the Officer on watch is to comply with the regulations for preventing collisions at sea. Requirements concerning the sounding of fog signals and switching on of navigation lights, are in particular to be complied with.

6.22 Precautions when the vessel is at anchor

When the vessel is at anchor following precautions shall be taken into account:

- main engines readiness for manoeuvring a minimum number of engine personnel must remain on board deck, engine watchkeeping
- at least one Engine Senior Officer are always to be present.

In non-sheltered areas, the engines should be ready for manoeuvring within one-hour maximum.

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6.23 Maintenance work on the main propulsion machinery when the vessel is at anchor

Unless it is considered essential, maintenance work should not be carried out on the main propulsion machinery when the vessel is at anchor.

Vessels may perform maintenance work while the vessel is at anchor only if permitted by the local Authorities. Masters shall request the necessary information from the shore Authorities before commencing the maintenance work.

the Chief Engineer deems that it is necessary, the following procedure is to be followed:

- a) The "Technical Manager or Fleet Manager" shall to be informed and his approval shall be requested
- b) The Master shall give his approval based on the evaluation of:
 - availability of both anchors
 - suitability of the seabed for anchoring
 - anchored position: whether in open sea or sheltered waters
 - good weather forecasts for the time required for the maintenance work
- c) All the weather forecasts available should be listened to during maintenance operations
- d) The expected duration of the maintenance work shall not exceed the interval between two consecutive weather forecasts unless, in case of need, the work may be interrupted, and the propulsion plant made operative in a short period of time.


6.24 Battery Precaution and Checks

Battery storage area shall be kept dry and clean at all time, Date of installation of the batteries, protective clothes (apron, goggles, gloves), eye wash facility and density meter shall be kept available at the battery storage area.

Periodical test of the voltage and density shall be made, and record kept.

6.25 Bunker sounding Precaution

Dead-weight self-closing device properly working and must be closed and capped at all time.

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6.26 List of Manufacturers instruction and technical drawings

The Chief Engineer is responsible for keeping an updated index of all manufacturer's instruction books available on board as well as an index of all technical drawings.

The index shall be checked at yearly interval and such a check shall be recorded. Duplicate of any missing instruction book or drawing, if any, shall be requested immediately to the technical department.

6.27 Engine Room preparation for departure

Preparation for port departure from port or anchorage should be commenced as far in advance of departure as is reasonable and practicable. Reference should be made and noted on the relevant checklist.


While manoeuvring or shifting, the engine control room shall be manned by the Chief Engineer, Engineer on watch, electrician and, at least, one rating. If Chief Engineer has to leave the engine for whatever reason he will inform the Master delegating his tasks to the 2nd Engineer.

6.28 Engine Room Emergency Preparedness and Actions in the Event of Emergency


Procedures and instructions to be followed in case of emergency are detailed in the 'Emergency and Contingency Plan'. A hard copy should be promptly available in the Engine Control Room.

6.29 Records and References

- Chief Engineer standing Orders
- Engineers Familiarisation Questionnaire – Form RTG-IMS-CRF-006
- Chief Engineer Night Orders – Form RTG-IMS-ENF-003
- Oil Record Book part I
- MEPC.1/Circ.736
- Lube Oil Analysis File
- Bunker Transfer Plan – Form RTG-IMS-ENF-005
- Bunker Check List – RTG-IMS-ENF-004
- Engine Operations Check Lists – RTG-IMS-ENF-002


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- DNVGL' ShipManager Database
- ISO 9001:2015 § 8.1
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- ISO 45001:201x § 8.1

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8 Maintenance and Reliability

8.1 General Principle

The maintenance of the vessel machinery and equipment (except navigation and communications) is planned and performed in accordance with the manufacturers' instructions and the Planned Maintenance Schedule (PMS).

The Chief Engineer plans and monitors the execution of scheduled maintenance and overhauling of main engine and auxiliary machinery following the maintenance schedule indicated by the makers. He shall also maintain accurate records of running hours and maintenance performed for different machinery and equipment.

The Chief Engineer monitors the parameters (time, wear and tear, etc.) that the maintenance/overhauling of different machinery and equipment is based upon and plans maintenance/overhauling as indicated by the manufacturer. The intervals of the maintenance/overhauling can be decreased as deemed necessary by the Chief Engineer, or after instruction of the office but in no circumstances (except when the safety of the crew and the environment is threatened) the manufacturer's allowances should be increased.

When during routine Inspection and Testing, if certain parameters are found outside the manufacturer recommended limits, the Chief Engineer shall schedule the necessary maintenance/overhauling works as soon as possible.


If and when deemed necessary, the Chief Engineer shall seek assistance from the Technical Department. Shipboard resources (crew), under the supervision of the Chief Engineer or his appointees, shall perform the maintenance /overhauling work.

When the shipboard resources are not sufficient to perform the necessary maintenance work, the Chief Engineer shall request from and co-ordinates assistance with the Technical department. When possible, riding teams are sent on board to undertake maintenance work. The Chief Engineer is responsible for the quality of maintenance carried out by the riding team, their supervision and notification of the Company.

In case where the maintenance work can not be performed by the crew, shore facilities are contracted to do the job. The Chief Engineer plans the work in advance and provides the instructions (specifications) to the contractors. If necessary, assistance is requested from the Technical Department.

8.1.1 Maintenance work and inspections

In the PMS, the Company provides detailed descriptions of the maintenance jobs to be carried out as well as the time interval between two consecutive interventions. Shipboard management should follow strictly such instruction.

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Maintenance works and inspections requested by this section concerns:

- Engine and deck machinery essential for the navigation, safety, environmental protection and the ship's service including, where applicable, their relevant safety devices.
- Fire-fighting and life-saving appliances and equipment.
- Bridge, external and internal communication and safety equipment.
- The ship structure and internal compartments (in particular: ballast tanks, open decks, external hull, the engine room, towing equipment, mooring equipment, etc.).

8.1.2 Criteria

Unless failures which make maintenance immediately necessary, routine maintenance work on machinery, systems, apparatuses, equipment, etc., is based on:

- Running or service hours as established by the manufacturer
- The continuous monitoring of their performance.

To this purpose, where the essential machinery, systems, apparatuses and equipment are not in continuous use, periodical inspections and tests are to be carried out to verify their condition and operation performance.


Additional or more stringent Company requirements may supplement the manufacturers' recommendations.

8.1.3 Schedule

When the maintenance criteria are based on service or running hours and the time intervals established by the manufacturer; however, the Technical Department may establish additional maintenance or inspection requirements if deemed necessary.

When the maintenance criteria are based on condition monitoring, maintenance is carried out when deemed necessary by the Master and Chief Engineer (for their respective departments) taking into account the results of inspections and tests.

Overdue items/jobs should be considered as a "Non- Conformity" and treated as such unless there is evidence that maker has extended the time interval. Job can be postponed subject to the approval of the Technical Manager and the DPA after having ascertained that is safe to do so. Postponement can be granted exclusively if an inspection of the machinery/part in question gives encouraging documented results.

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8.1.4 Recording

Maintenance work is to be recorded in a paper or computerised maintenance system. Test and checks will be recorded in the appropriate forms.

8.1.5 Subcontractors

When the Company deems that, due to the workload foreseen and the complexity of the maintenance work to be performed, external resources are necessary, the Company may appoint subcontractors (technically qualified persons or companies) to carry out specialised works on managed ships.

Subcontractors will be appointed according to strict criteria concerning the quality of the service. The Company will closely monitor the services provided and maintain a list of qualified subcontractors.

8.1.6 Spare parts and material

Requisition for spare parts is made by the Master and Chief Engineer, taking into account the maintenance work schedule and possible need for repairs. Detailed instructions for purchasing and requisitions are given in Tug & Barge Instruction Section 11.

The Technical Department shall arrange for the prompt supply of the spare parts necessary for the ship's safety and for pollution prevention.

The Purchasing Office and the concerned department onboard must have documentation to verify what requisitions have been totally or partially complied with and which requisitions are still pending.

8.1.7 Inventory and storage


When the spare part or material is delivered on board, the Master or Chief Engineer (depending on the department) shall check carefully the quantities and qualities of the supply and send to the Head of the Department responsible for the purchases confirmation of receipt of the materials.

Any discrepancy from the order and subsequently and any poor quality of the spare parts received, is to be immediately reported to the relevant department.

The spare parts available on the ship are to be recorded in an Inventory, indicating the location where they have been stored, and regularly updated by the Master or Chief Engineer.

The Technical Department will keep copy of the Inventory of spare parts relevant to all managed ships.

Material and spare parts are to be stored onboard in suitable protected areas and in such a way that atmospheric conditions cannot affect it and to be promptly available in case of need.

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8.1.8 Purchase of stores and provisions

The same criteria established in the preceding paragraph to be applied. Detailed instructions are given in Tug & Barge Instruction Section 12

Selection of suppliers, spare parts, material, stores and provisions suppliers shall be selected in accordance with the following criteria:

- quality and reliability of preceding supplies
- timely delivery of the service or supply
- good quality/price ratio (whenever possible, original spare parts will be supplied).

The Purchasing Department has a list of selected suppliers. Each time the Master or Chief Engineer notifies the supply of defective parts or incorrect quantity/s, the Purchasing Office shall issue a complaint. Should the situation recur, the Purchasing Manager may decide, at his own discretion and based on the severity of the fact, to list the supplier as “Unsuitable” for future use.

8.1.9 Analysis of oils and water


Periodical analysis of lubricating oils, fuel oils, main engine and auxiliary engines for the purpose of preventing failures or malfunctioning of machinery and systems are requested.

Analysis may be performed onboard and ashore laboratory.

Time intervals of fuel, lubricating oils and water analysis are as follows:

TYPE OF ANALYSIS	MACHINERY	FREQUENCY
Water analysis	Main engine	Every day
	Auxiliary Engines	Every day
Lubricating oil analysis	Main engine	Every 4 months
	Auxiliary Engines	Every 4 months
	Stern Tube	Every 4 months
	Steering Gear	Every 12 months
	Deck Machinery	Every 12 months
	Other Hydraulic System	Every 8 months
Fuel oil		After bunkering (where applicable)

Results of the analysis carried out ashore are received by the Technical Department which will send copies to the concerned ship recalling their attention if some remarks are noted and the vessel should reply with the corrective actions taken.

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Results of the analysis carried out on board are kept on board and Technical Department is promptly notified in case of anomalies and corrective actions taken.

The reports containing the results of the above-mentioned analysis are kept in the files of the Technical Department ashore and by the Engine Department on board ship.

8.2 Emergency Equipment

In addition to the SOLAS requirements, the Company has established an Inspection and testing program in the PMS for all fire fighting and life saving appliances as well as for all equipment and machinery failure of which might affect safety of lives, ship, its cargo and the environmental protection.

Such inspections and relevant tests must be duly recorded in the proper Company's form.

Brief description how to conduct tests/checks, time interval and maintenance are given in the Company forms titled "Record of Inspections and Tests".

Once carried out, tests and checks shall be duly recorded in the same form and filed on board for future reference. Any defect noted during the tests shall be reported in the dedicated section "Remark" where the proposed corrective action and date when anomaly is rectified should also be recorded.


8.3 Critical Equipment

8.3.1 Identification of Critical Equipment and System

Critical equipment and systems are identified using the FMEA (Failure Mode and Effects Analysis) technique. The analysis of each equipment (failure mode) is detailed in the Annex 1 of this Fleet Instruction where the following information are given for each equipment (failure mode):

- Failure Mode;
- Effects;
- Causes;
- Indications;
- Safeguards; and
- Qualitative Failure Risk Level.

Whenever the failure risk level is HIGH, the equipment or system is considered as CRITICAL.

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While identifying the critical equipment and systems, the Company has taken into consideration the redundancy of the equipment, the experience and the potential impact which a failure may have in the safety and environmental:

The following equipment and system have been identified by the Company as 'Critical Equipment and Systems'.

- Back up battery system;
- Fire pump;
- Fire detection system;

8.4 Electrical Equipment

The Chief Engineer is responsible for the proper and safe working conditions of all electrical equipment throughout the vessel.

The Chief Officer is responsible for the rigging and stowage of portable electrical equipment required for deck maintenance and other purposes. The equipment shall be stowed in a convenient and safe place.

Under no circumstances should non-intrinsically safe equipment be used in the engine room.

All Engineers should be properly familiarized with the day-by-day duties involved the electrical installation included.


Regular cleaning of electrical parts is essential. Only approved cleaning products should be applied, as incorrect materials can damage insulation.

Abnormal heating of electrical machinery is an indication of overload. Any incident of this nature should be investigated immediately and the equipment should be restored to normal and safe working condition.

The correct procedure for synchronising alternators should be observed at all times. On ships fitted with automatic or synchronisers, manual synchronising should be placed under the supervision of the Chief Engineer.

The insulation resistance of all electrical equipment should be taken and recorded as a routine. Forms for this purpose are on board and should be completed and returned to the technical department as instructed.

All alarms, emergency stop circuits and earth monitors should be tested at regular interval, preferably at not less than monthly intervals in the case of older vessels. The tools and tests equipment supplied to the vessel on delivery for use by the electrical Officer should not be used by other crew members.

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Remember, electricity can kill. Therefore, safe working practices should be observed at all times particularly when working on main switchboards. Explosion proof fittings should always be correctly re-assembled after maintenance and should only be replaced by equipment with similar certification.

8.5 Maintenance of Mooring Equipment

Rollers, fairleads and pedestal rollers

Deck machinery condition and performance is a joint responsibility of the deck and engine department. The internal parts of the rollers, fairleads and pedestal rollers must be regularly inspected and properly lubricated. They should be able to rotate freely.

Anti-Slip paint at mooring stations

Mooring deck plating around mooring area must be painted with anti-slip paint. It is desirable to have the escape walkway painted with such paint as well.

Quick Release Mooring Hook

The quick release mooring hook enable mooring lines to be safely secured, quickly and easily released even when loaded to their safe working load limit. In order to function, the quick release mechanism must be properly maintained.


Proper greasing, maintenance and testing should be carried out regularly to ensure the quick release mooring hook is in good working order.

The following table describes and summarize the maintenance policy for mooring equipment:

Equipment	Job	Frequency	Responsible person(s)
Quick Release Mooring Hook	Greasing and visual inspection	Weekly & whenever necessary	Chief Officer
Rollers, fairleads and pedestal rollers	Greasing and visual inspection	Weekly & whenever necessary	Chief Officer

8.6 Repairs and Drydocking

Drydocking and repairs shall be scheduled within the intermediate hull class survey and within the renewal class hull survey. Fleet manager shall propose in advance the place and period when the vessel can be stopped for repairs and the Chief Operating Officer shall approve such proposal.

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Unless for serious reasons, class drydocking surveys shall not be extended over the due date.

Dry-docking of a vessel is decided after evaluating various elements such as:

- Class surveys and outstanding to be carried out while the vessel is in dry dock;
- Hull maintenance and repairs needing the ship in dry dock;
- Hull cleaning needs evidenced by poor speed performances

Often, dry-docking of the ship is associated with shipyard works.

8.6.1 Preparing for Drydocking

As soon as the Fleet Manager has fixed the yard, he will inform the Master about the following:


- Date and place of dry-dock.
- Gas-free requirements.
- Ballast conditions.
- Draft and trim.
- Other requirements (i.e.: fuel on board, fresh water on board etc.).
- When necessary, the technical Managers shall also provide shore support.

8.6.2 Work Specification

In view of repair works to be executed by a shipyard, a repair specification must be prepared by the Fleet Manager and whenever required with the support of the safety and operations departments.

The Fleet Manager shall prepare the draft of the work specification (list of the works to be done), taking into account the defect or recommendations reported through the:

- **Dry-dock defect list;**
- **Damage/failure Reports;**
- **Class Recommendations and Condition of class;**
- **Company and third-party Inspection Reports;**

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Once drafted the works specification, an onboard survey shall be performed by Fleet Manager in order to complete such a specification with the support of senior officer.

The Master and Chief Engineer shall be fully involved in the preparation of works specification, for this purpose report as much defect or works that may be easily done in drydock.

The final works specification will be prepared by the Fleet Manager and submitted to the Chief Operating Officer for approval.

8.6.3 Spare Parts Supplying

In order to prevent possible delay of the vessel's delivery, the Technical Superintendent will ensure that all the spare parts and materials necessary to carry out the works are ordered and supplied in due time.

8.6.4 Works Carried out by Crew or Subcontractor

The Fleet Manager will agree with Master and Chief Engineer a program of works to be carried out by the ship's crew when the ship is at yard.

It is likely that both yard and ship will employ specialist sub-contractors to carry out certain repair or maintenance activities. The yard safety management system should include procedures to ensure that such contract personnel comply at all times with the yard requirements.

The Master, Chief Engineer and company representative should ensure that any contractors appointed on behalf of the ship comply at all times with the yard requirements.

The Master and company representative should advise the yard where work is to be carried out by contract personnel.


8.6.5 Activities at Yard

The Fleet Manager, supported by the ship's Master, Chief Engineer and Crew, will carefully monitor all the works carried out by the shipyard and by sub-contractors, to ensure compliance with the work specification and agreed amendments. They will also assist the surveyor during class inspections

The Fleet Manager will liaise with the shipyard every time a problem is identified, when they try to change scheduled procedures or if an unpredictable problem arises from vessel's side.

During the long stay in the shipyard, the Fleet Manager will be constantly informed on the condition and progress of repairs.

Daily meeting should be agreed between Company Manager and shipyard representatives. The purpose of these meetings is to (as applicable):

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- review all permits in force, plus those that have been issued or cancelled since the last meeting;
 - co-ordinate all the work being done by the yard, contractor and ship personnel so that there is no inadvertent change in working conditions or interaction that could jeopardise the ship or the workers;
 - review all system or equipment tests and coordinate these with other repair activities;
 - review any accident resulting in personal injury or damage to the ship together with near misses of high potential;
 - review any reports of deviations from expected safety rules and established procedures, and identify the appropriate corrective action including a time table for completion;
 - review of all ultrasonic, X-ray or hydrostatic testing expected during the day and the precautions to be put in place so this work can be done safely;
 - review any own or other vessel movements that could impact on safety or progress of the repairs.
- Immediately after the daily meeting, the status of the work specification should be updated accordingly. Meetings are to be held until completion of works.

8.6.6 Works Specification List

An exhaustive drydock work specification list shall be prepared by the Fleet Manager at the end of ship drydocking.

The dry-dock work and/or work specification list with enclosed all the document concerning testing and calibrations, must be kept in the shipboard and Technical department files.

The inspection reports issued by class must be filed on board and Technical department class or ESP files, in accordance with the relevant filing system.


8.7 Inspection of Tanks and Void Spaces

Inspections of the ship's structure are to be made whenever possible or at time intervals established by the Technical Department and, trading pattern permitting, such interval should not exceed one year for ballast compartments and void spaces.

These intervals depend on:

- Condition of the structure and coating of surfaces;
- Ballast spaces to be prioritised.

Detailed report on tank structures shall be reported in Company's forms "Structural Condition Report" copy of which shall be mailed to Technical Department and one copy stored in the ship's file every time when compartments are entered and inspected

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8.7.1 Accident Prevention Measures

Before carrying out the internal examination, the Master or Chief Mate shall ensure that the following aspects, but not limited to, are assessed / taken to ensure safe execution of the survey:

1. Tanks and spaces are safe for access, i.e. gas free, ventilated and the requirements for safe entry to confined spaces as per work permit procedure are to be met.
2. Spaces are to be sufficiently illuminated, clean and free from water, scale, dirt, oil residues, etc. to reveal significant corrosion, deformation, fractures, damage or other structural deterioration.
3. A tank entry permit is to be issued prior to entering the space. Adequate ventilation is to be maintained during the survey, and the required ventilation is to be specified on the entry permit.
4. A communication system is to be arranged between the survey party in the space and the responsible officer on deck.
5. Rescue and safety equipment such as breathing apparatus, resuscitators, smoke hoods, rescue lines, stretcher, etc. is to be provided at the space entrance.


8.8 Maintenance and Inspection of Embarkation Means

As far as practicable, the means of embarkation and disembarkation should be sited clear of the working area and should not be placed where suspended loads may pass overhead.

Adequate lighting should be provided to illuminate the means of embarkation and disembarkation, the position on deck where persons embark or disembark and the controls of the arrangement.


A lifebuoy equipped with buoyant lifeline should be also available for immediate use in the vicinity of the embarkation and disembarkation arrangement when in use.

Means of embarkation/disembarkation should be securely attached to the ship but never be secured to a ship's guardrails unless they have been designed for that purpose. If positioned through an open section of bulwark or railings, any remaining gaps should be adequately fenced.

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8.9 Record/ Reference

- Batteries Log
- Deck Maintenance Register
- Ballast Tank Inspection
- Hull and Superstructures Inspection
- Other Compartment Inspection
- Record of inspections and test – Engine
- Record of inspections and test – Firefighting
- Record of inspections and test – Lifesaving
- Megger Test
- Water and lube oil analysis record Log book
- Monthly PMS Report
- DG Inspection Report
- Failure or Damage Report
- ISO 9001:2015 § 8.1
- ISO 14001:2015 § 8.1
- ISO 45001:201x § 8.1

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9 Ship to Shore Communications

9.1 General

All formal communication with the Company should be in English or Bahasa Indonesia only. Whenever a translation in Bahasa Indonesian is required, the DPA will provide the translation upon Master request.

9.2 Daily Position

A daily report should be sent to all RTG Departments at noon time and it shall include at least the following information:

- Ship position (latitude and longitude or place where the ship is berthed or anchored);
- Weather conditions;
- Speed and distance made good;
- Main Engine RPM;
- M/E and Aux Engine Consumption;
- Speed and distance from departure;
- Bunker and Fresh Water ROB;

The daily position should also contain additional information which may be requested by charterers or by owners.

9.3 Routine Communications


Routine communications from ship to office should be made in writing and possibly by email. Verbal communications should be discouraged.

Communications between crew members and crew agencies should pass through the Master.

9.4 Emergency Communications

For emergency communications, the Master shall refer to the Emergency and Contingency Plan.

Communications forms required by the Flag Administration shall be always used and submitted to the appropriate person(s) or Office.

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9.5 Correspondence

It is necessary that reports on various matters concerning the running, operations and safety of the vessel and crew should be made at regular intervals.

Documentation and reports concerning to Incidents or Near miss should be brief and confined to essential facts.

Any incident which may lead to a claim on vessel or Company must be fully reported. A letter addressed to the RTG Head Office shall be marked for the attention of the respective department concerned, copy of all correspondence must be filed in ship's file and under no circumstances is to be removed from the ship, this need not prevent the Master retaining an extra copy for his own use, but he must hand-over an intact record to his relief.

Any communication, of whatever nature, from ship to Company shall be approved by Master. Master must note that the practice of using rubber stamp signature for advance notes, allotment notes, similar documents including Log Books, is NOT permitted under any circumstance.


All correspondence received on board from the Office must be also be duly acknowledged in return via email. The correspondence sent to the Company shall be addressed to the respective department.

9.6 Documentation to submit to the Head Office

Official reports and documentation transmitted from the vessel to the Company are to be sent via email by the Master on monthly basis and processed as it follows:

Monthly:

- Safety Committee Meeting Minute
- Deck Monthly Report
- Engine Monthly Report

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When Issued:

- Appraisal Reports;
- Master / Chief Engineer Handing Over Reports;
- Master Review;
- Damage reports;
- Incidents and Injury reports;
- Non-Conformity Reports;
- Tanks and void space Inspection reports;
- Hot Work Permits

9.7 Record/ Reference

- GMDSS Log Book
- ISM Code § 1.4
- Emergency and Contingency Plan
- ISO 9001:2015 § 7.4
- ISO 14001:2015 § 7.4, 8.3
- ISO 45001:2015 § 7.4, 8.6



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10 Bunkering

10.1 General

The purpose of this section is to ensure safe transfer of bunkers. For the purpose of these instructions the term “Bunkering” refers to the bulk transfer to vessel of fuel and lubricating oils as well as to the transfer from vessel of sludge and other residual oils. Simultaneous receipt of different grades of bunkers (except lubricating oils) is prohibited.

10.2 Responsibilities

The **Company and / or the Charterers** is responsible to supply bunkers and lube oils which meet the ISO Standards and the provisions of Annex V of MARPOL Convention.

The Master is responsible for ensuring that the vessel has enough bunkers for the intended voyage.


The **Chief Officer** is responsible for the maintenance and deployment of pollution prevention equipment.

The **Chief Engineer** is responsible for:

- Supervising whole bunkering operations with the support of an experienced officer;
- Preparing the bunkering plan and discuss it with the personnel involved in the operation;
- Ensuring that a sufficient volume is available into the tank where the bunkers will be transferred;
- Segregating as far as practicable the new fuel oil from the old one existing on board in order to avoid any problem in case of disputes about the bunker’s quality;
- Verifying that that unused valves are properly closed and blind flanges are installed and bolted;
- Taking all other necessary prevention steps to avoid overflow or any kind of spillage;
- Training the personnel involved in bunkering operations;
- Ensuring effective communication between the vessel and the other unit;
- Ensuring that involved personnel is aware of conditions/arrangements such as valves setting, ullages, quantities to be bunkered, filling sequence, drafts, flow rates, sampling arrangements

The **engineer** of the watch is responsible for:

- ensuring that the pre-transfer conference is logged by the person in charge of bunkering;

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- being prepared to deal with emergencies.

The **crew member on-duty** is responsible for:

- staying near the bunkering hose connections, inspecting hoses/connections for linking/chafing;
- raising the alarm by using his talky-walk in case of incident;

Deck ratings are responsible for:

- inspecting the ship's moorings
- checking for leakage through vents and overflow pipes and around the ship as well.

10.3 International and Local Requirements

Sufficient personnel should be available on board for bunkering operations; Company procedures as well as local regulations, national and international laws must be strictly adhered to when carrying out routine bunker transfer and waste disposal operations.

The following must be satisfied:

- Pre-transfer meeting with the supplier to be held to agree the rate, confirm quantity etc..
- Bunkering plan to be completed as described, displayed it and filed;
- Bunkering check-list to be completed as described, displayed it and filed;
- "Discharge of Oil Prohibited" posters to be posted at control and transfer stations;
- Oil Record Book Part I to be filled up in details as per MARPOL Convention Annex I requirements, checked/signed by Master and kept on board for three years;
- Personnel assigned to bunkering, other than watchman, not to be assigned with any other duty.

10.4 Bunker Quality


Sulphur content of any fuel oil used onboard ships shall not exceed 0.5% m/m.

10.5 Bunker Sampling

Samples should be taken at the receiving ships' inlet bunker manifold and drawn continuously using:

- manual valve setting continuous-drip sampler

Recommendations given by the appointed laboratory (i.e. DNVPS, etc.) for sampling shall be always observed.

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Immediately prior to filling the retained sample container, the sample quantity (not less than 400 ml in volume but not more than 90% +/- 5% capacity) should thoroughly agitated to ensure it is homogenous before being sealed.

Then it is signed by the supplier's representative and the Master or the Officer in charge and retained on board until the fuel oil is substantially consumed, but at least for **12 months**.

Attention is to be paid to delivery note that must contain at least the following information:


- Name and IMO number of the vessel
- Port
- Date of commencement of delivery
- Name, address and telephone number of fuel oil supplier
- Product name (s)
- Quantity (metric tons)
- Density at 15° C (kg/m³) (ISO 3675)
- Sulphur content (% m/m) ISO 8754
- A declaration signed and certified by the fuel oil supplier's representative that the fuel oil supplied complies with Regulations 14 and 18 of MARPOL Convention Annex VI.

Safety Consideration during sampling:

The following safety precaution shall be taken during any sampling:

- Protective equipment to be worn by personnel involving in sampling;
- H₂S detection must be carried out periodically;
- Spill prevention procedures shall be adhered to;
- Spill containment equipment shall be available and properly plugged at bunker manifold

NB: The bunker delivery note shall be retained for a period of 3 years after the FO delivery.

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10.6 Minimum Quantity of Fuels to be stored on board

The Master has the ultimate authority and responsibility to ensure that the vessel has enough bunkers for the intended voyage. The decision should take into consideration also the Chief Engineer's opinion.

The quantity of fuel to be kept on board must be sufficient for the intended voyage plus a safety margin of 20%. If the voyage is lasting for less than 10 days, the safety margin should be considered as three days of navigation.

In order to keep the Diesel Generator(s) on service at all required times, sufficient quantity of diesel oil should be also stored on board plus a safe margin of 20%. A possible failure of the shaft generator should be taken into consideration, if fitted.

10.7 Bunker Operations

10.7.1 Gauging of Bunker Tanks

During navigation the amount of bunker shall be checked every day to ensure the integrity of the tank. In addition, and twice a day at least, checks are carried out in order to verify if there is water inside the daily and settling tanks. If so, water is to be drained.

10.7.2 Bunkering Plan


Prior to the pre-transfer conference, the Chief-Engineer prepares a bunkering plan which is attached to the oil transfer procedures and includes the following:

- Identification, location and capacity of the bunker receiving tanks;
- Level and type of liquid in each bunker tank prior to bunkering;
- Final ullage and innage, and percentage of each bunker tank to be filled;
- Sequence in which tanks are to be filled to ensure stability, trim and draft are within acceptable limits throughout the operation;
- Procedures to regularly monitor bunker tank levels and valves opening;

NB: The filling limits described earlier must not exceeded the 98% of the tank total volume. A copy of the bunkering plan is to be displayed during throughout the bunkering operations.

10.7.3 Pre-Transfer Preparation

Personnel assigned to bunkering must understand and prepare for bunkering as follows:

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- Understand the planned bunkering operation according to the plan;
- Understand the characteristics and limitations of the bunkering equipment;
- Instruct and inform other involved personnel regarding the bunkering plan;
- Refer to posted pipeline drawings, instructions, positions and names of attending persons;
- Ensure that all air vents are not obstructed;
- Ensure that manifold markings really match with the bunker/lube oil line to be used;
- Ensure that proper fitting bolts and gaskets are prepared;
- Ensure that all scuppers are affectively plugged and ascertain for any leaks;
- Ensure that all unused manifolds are properly blanked with a bolt in every hole;
- Ensure that the correct bunkering signals are shown;
- Ensure the proper condition and lay-out of moorings, hoses and bunkering equipment;
- Empty fuel overflow tank if applicable;
- Ensure that the bunker station and surrounding area are adequately illuminated;
- Connect bunker hoses to the manifold and check lines and valves are in correct position;
- Ensure ullage measurement and tank sounding equipment is in good order;
- Ensure that lines and valves set up are double-checked by two different crew members.

10.7.4 Transferring and topping - off


The officer in charge must tell his interlocutor at the bunkering unit when operations are ready to start.

The transfer operation must start slowly so it may be ascertained that the oil goes into the correct tank and that hose connections are tight before increasing the oil flow to the agreed loading rate.

Also, air vent pipes are to be inspected to ensure that displaced air and gases can escape freely and safely.

Bunkering must be stopped immediately if:

- A fire is starting on-board or in the vicinity;
- Some localised thunder and lightning storms are happening;
- Dangerous vapour is accumulating around the ship;
- A pipeline, hose or loading arm connection has burst or is leaking;
- An overflow occurred.

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- Any unexpected sounding or alarms sound.
- The facility or the bunkering ship are no longer manned;

In the event of a spill, bunkering operations may not be resumed until notification is made to the local authorities and the person in charge determines that there is no threat of subsequent oil spills.

The officer in charge is responsible for:


- Contacting his interlocutor at least once each hour to ensure everything is under control;
- Ensuring that sufficient personnel are supervising the transfer at each required place.
- Alerting his interlocutor about possible pressure changes before undertaking any change;
- Keeping the bunkering rate within safe and agreed limits;
- Regularly monitoring tank gauges to confirm that bunkering rate is as previously agreed and to prevent accidental overflowing;
- Giving notice to the supplier when ready for topping off;
- Topping off the double bottom tanks by gravity from deep tanks whenever this possible;
- Reducing flow rate before and during topping-off;
- Testing and maintaining communications with the supplier before and during topping-off;
- Ensuring that the facility or the supplying ship valves are shut first;
- Ensuring that the tanks contents have stabilised upon completion of one grade loading;
- Ensuring that ship's valves are closed during any temporary stoppage;

The final quantity and sounding must be recorded in the Oil Record Book.

10.7.5 Completion of Bunkering Operations

The officer in charge is then responsible for ensuring that:

- tank valves are closed and automatic tank vents are still operational;
- tanks openings are made watertight;
- pipelines and hoses (between shore control valve and ship's manifold) have been cleared;
- Sufficient ullage has been left to take draining from the pipeline system;
- drain cocks at manifolds are open and lines are drained to save-alls before disconnecting;

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- Manifold blanks are securely fitted after hoses or arms are disconnected.
- Completing the bunker receipt calculations and checking the samples along with the C/E.

10.8 Material Safety Data Sheet

Before commencing any bunker operation, the Chief Engineer shall ensure that the MSDS has been provided by the supplier and that the crew involved in the operation is familiar with the Health-Safety and environmental information.

10.9 Records and References

- ISM Code § 7
- Bunker Check List – Form RTG-IMS-ENF-004
- Bunker Transfer Plan – Form RTG-IMS-ENF-005
- ISO 9001:2015 § 8.1
- ISO 14001:2015 § 8.1
- ISO 45001:201x § 8.1



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15 July 2021	12.3.1	"The requisition that is not turned to PO by 90 days from the creation date will be deleted by Procurement Officer. If Master / CE still needs it, must raise a new one"	1
20 May 2022	12.3.1	Amend "old request to cancelled and re issued accordingly"	2

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12 Purchasing and Requisitions

12.1 Scope

The purpose of this procedure is to ensure adequate supply of spare parts and consumables to the vessels managed by RTG and to establish efficient and effective practices both aboard and ashore.

12.2 Responsibilities

The responsibilities of shore-based staffs are detailed in Shore-Based Procedure (SBP) 016.

The **Master** and **Chief Engineer** are responsible to:

- Ensure that the Purchase requisition order (PR) are issued in due time, considering the time required for delivering the requested items;
- Ensure that that delivered items are checked upon delivery and that conform to specified purchase requirements;
- Inform the Superintendent & Purchaser whenever a delivered item doesn't not comply to the specified purchase requirements;
- Ensuring that spare parts and consumables are properly stored and that inventories are kept updated;
- Ensure that the official communication between Vessel and office will be done by emails. No other means are allowed

12.3 Details

12.3.1 Purchase Requisitions

On board vessels managed by RTG, only the Master and the Chief Engineer are authorized to issue a Purchase Requisition (PR). They may delegate any officer to prepare and send the PR under their final responsibility. Purchase requisitions are to be issued by means of DNVGL ShipManager. Where ShipManager is not implemented, the controlled Forms T005 shall be used instead.

Separate requisitions must be issued for different group of items (spares, paint, consumables, safety items, PPE, chemicals, gases and so on). Different group /category of items are not allowed to be requested on the same requisition. [“The requisition that is not turned to PO by 90 days from the creation date, after Superintendent’s check & green light, will be deleted by Procurement Officer. If Master / CE still needs it, they must raise a new request on SM ”](#)

12.3.2 Approval

Purchasing requisition are evaluated and approved by Superintendent as per SBP 016 'Procurement'

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12.3.3 Urgent & Critical Spares requisition

Indication “Critical Spares” & “Urgent” must be mentioned in the Subject /title of requisition. Master/CE must notify it to Superintendent & Purchaser immediately by email separately from requisition

12.3.4 Requisition for Spare Parts

Purchase Requisition of spare parts shall be raised taking into consideration the ROBs, in order to keep vessel’s maintenance at the highest standards.

Those requisitions which are not urgent shall be raised **every three** months, according to table in Paragraph 12.6, with an outlook of 6 months’ operations.

All spare parts shall be clearly identified with a maker’s reference (part number) related with the type and serial number of the machinery itself.

Other materials shall be identified with reference to maker’s reference number or any other kind of identification mark to avoid wrong supply.

The proper budget code must be inserted accordingly

12.3.5 Requisition for Consumables Stores

Purchase Requisition of consumables items shall be raised every three months, according to table in Paragraph 12.6, taking into consideration the ROBs and with an outlook of 6 months’ operations.

The items must be identified with IMPA CODE and the proper budget code must be inserted accordingly


12.3.6 Requisition for ‘LANDING PARTS’

It is RTG policy that all parts that have been renewed and that cannot be reconditioned or overhauled on board are to be landed for evaluation of possible reconditioning, overhauling, salvaging or disposal. Spare Part Requisition form will be used with specific note “*parts landed for evaluation*”.

The landed items must be always escorted by Landing form and the Landing form must be forwarded to Superintendent & Purchaser in order to trace the items.

12.3.7 Direct purchasing

Direct purchasing is not permitted unless authorised by the Company.

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It is permitted and required only in the following cases and always after having informed the office and received written approval:

- Purchase of Nautical Charts due to sudden change of vessel's itinerary;
- Purchase of Parts which, if missing, could affect ship's operations; and
- Purchase of Services which, if not provided, could affect safe ship's operations.

12.4 Purchase Order Confirmation

Once the PR and relevant offers (received from ship suppliers) have been approved by the Superintendent, the order can be confirmed.

The Superintendent shall inform the Master in case the requested items have been cancelled, increased or decreased in their quantity and mention the reason on Procurement Software as well

12.5 Delivery on board


12.5.1 Notice of Delivery

Before the ordered items are supplied, the Purchaser shall provide the delivery note to Master/CE

12.5.2 Verification of Delivery Items

The following table describes the type of control which should be applied. Such a control depends on the material delivered:

Material	Type of check
General spare parts	Visual control of each item including spare part code. Ensure that all parts are not damaged and well preserved. Items and quantity received should match with the packing list.
Critical spare parts	
Environmental equipment spare parts	
Consumable items	Visual check of each single item ensuring that all items are not damaged and well preserved. Items and quantity received should match with the packing list.

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12.5.3 Ship's Confirmation of Delivery

The Superintendent & the Purchaser or other shall be informed within 48 hours from the time of delivery. The confirmation of delivery shall be given through DNVGL ShipManager or by email.

12.5.4 Conformance with the Purchased Materials

Along with the confirmation of delivery, the Master/CE shall report to the Superintendent & the Purchaser **if any**:

- delivered item is damaged, spoiled, expired or worn-out;
- non-conformance to the T&C is noticed; and
- mismatch with the packing list is noticed.

12.6 Timing and Quantity of Normal Orders

Normal orders shall be placed by each vessel in a coordinated and consolidated manner in order to:


- Obtain the best possible discount for bulk orders from Suppliers;
- Save on shipping costs;
- Increase the efficiency of the Purchasing System.

For such a reason, all normal orders shall be placed as per the below table.

In addition, the quantity of items requisitioned under normal orders shall be made so as to ensure a supply sufficient for 6 months' operations, this means that for each item the crew shall:

- Identify the need for the next 6 months;
- Evaluate it against what "Remaining on Board";
- Issue a Purchase Requisition for the balance.

BUDGET CODE	DESCRIPTION OF ITEMS	January April July October	February May August November	March June September December
S04-001	Lube Oils	✓		
S04-002	Greases	✓		
S05-005	Regular Parts - Main Engine		✓	
S05-006	Regular Parts - Genset		✓	
S05-007	Regular Parts - Conveyor		✓	
S05-008	Regular Parts - Deck Crane			✓

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S05-009	Regular Parts - Aux. Machinery		✓	
S05-010	Regular Parts - Deck Equipment			✓
S05-011	Regular Parts - Dozer			✓
S05-012	Regular Parts - Thruster		✓	
S06-001	Paints	✓		
S06-002	Wires and Ropes - Cargo Gears	✓		
S06-003	Deck Stores			✓
S06-004	Engine Stores		✓	
S06-005	Steward Stores	✓		
S06-006	Printing & Stationery	✓		
S06-007	Chemicals - Maintenance	✓		
S06-008	Charts & Publications	✓		
S06-009	Gases	✓		
S06-010	Safety equipment	✓		
S11-010	Crane & Grab Wires			✓
S11-011	Mooring Ropes	✓		

12.7 Prohibited Items


RTG is against using material that are Carcinogen (cancer causing), contains chemical hazards or are of toxic substances. When raising a requisition, one should be aware if the item being requested is prohibited. Prohibited items will not be supplied and used on our vessels. One such material is asbestos.

Checks are carried out with vendors to ensure that those supplied to the vessels are not prohibited by law or by the industry.

When spares & goods might potentially contain asbestos, a note to Vendor shall be added in the PO stating:

“All Spares & goods delivered must be asbestos free”

Before the order is send out to the vendor(s), the Purchaser and Superintendent shall check, whether this “Note to vendor” is added in the Purchase Order.

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12.8 Harmful Materials

There are instances where harmful substances cannot be avoided. For example, Benzene found in marine fuel and paint, welding fumes generated during welding and chemical used for engine treatment.

The warning is usually labelled in the packing and vendors are requested to provide them when relevant. One should be extremely carefully when handling such material and should try to minimise direct contact. Proper personal protective equipment is issued to vessel and individual to protect the wellbeing of the crew, preventing ill health and should be put to proper use.

RTG aims to replace these materials with those that are not harmful to human as and when possible.


12.9 Transfer of items/equipment from vessel to another Vessel

After green light from Technical Dept. items, spares, equipment can be transferred from one vessel to another one and they must be escorted by Transfer Form.

Once done a copy of transfer form duly filled must be sent to Superintendent and Purchaser by email


12.10 Records and References

- Deck Store requisition Form - RTG-IMS-TCF-005A
- Engine Store requisition Form- RTG-IMS-TCF-005B
- Spare Requisition Form - RTG-IMS-TCF-005C
- Purchase Orders Status – Form RTG-IMS-TCF-006
- Spare Parts Inventory Log – Form RTG-IMS-TCF-007
- Transfer Form
- Landing Goods advice S021
- ISO9001:2015 § 8.4
- ISO 14001:2015 § 8.1
- ISO45001:201x § 8.3, 8.4, 8.5
- Shore Based Procedure SBP 16 – Procurement
- DNVGL ShipManager

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12 Environmental Protection

12.1 Company Environmental Policy

In compliance with the legislation in force against pollution from ships (MARPOL Convention and its Amendments), the Company aims to achieve the complete elimination of intentional pollution of the marine environment by oil and other harmful substances.

Moreover, in order to prevent any accidental pollution that violate the regulations of the MARPOL, its Annexes and all other International and National Legislation, it is in the Company best interest to have technical efficient vessels and well-trained officers and crew; this ensures the highest operational quality and safety level.

The effective implementation of the Company's "Safety and Environmental Protection Policy" is regularly reviewed in order to ensure both that the objectives are achieved and that the procedures and instructions are suitable and effective.


The regulations which most and directly determine Company's and ship's commitment to the prevention of pollution are summarised here below:

- International Convention for the prevention of pollution from ships (MARPOL 73/78)
- Annex I - Oil
- Annex IV - Sewage
- Annex V – Garbage
- Annex VI – Prevention of Air Pollution from Ships
- Prevention of Noise pollution
- Prevention of harmful discharges which may cause contamination of the environment (i.e. Ballast water, Cargo vapour emission, Anti-fouling paints.)
- National regulation and local port requirement

12.2 Compliance with MARPOL

Bilge waters and similar, cargo oil/water mixtures, garbage, grey waters, sewage, noxious liquids substances are to be disposed off in accordance with MARPOL and national requirements.

However, more stringent requirements may be imposed by coastal Authorities while the ship is in waters under the jurisdiction of that Authority. It is the Company and Master's responsibility to request information on any more stringent requirements issued by coastal Authorities.

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12.3 MARPOL Annex I – Pollution by Oil

Discharge of Oily water is ruled by MARPOL – Annex I.

Oily mixtures coming from the engine room bilges and dirty ballast may be discharged into the sea through approved oily water separating equipment only if the ship is sailing at least 12 nautical miles from the nearest land and the oil content of the effluent is less than 15 ppm.

12.3.1 Accidental spillage of ship's Bunkers

The accidental spillage of ship's bunkers is probably the most emotive form of environmental pollution. There are many potential causes of such incidents, the principal causes are listed below; together with policies to minimise the risk of such spillages occurring.

Many of the causes are as relevant to the safety of the ship as they are to environmental protection and will already be covered by company operational procedures and instructions.

Potential causes of Pollution have been headed as follows:

- Spill Containment during bunker Operations
- Draining of lines, Hoses and Loading Arms - Bolting of Blank Flanges
- Bunker Lines Leaks
- Hull Failure
- Bunkering

12.3.2 Bunker Line Leaks


In order to prevent pollution, hydrostatic pressure tests are to be carried out at maximum working pressures.

Date and pressure at which the test was performed shall be recorded on the relevant piping system. Piping system hydrostatic tests shall be made at no more than one-year interval.

12.3.3 Bunkering

In the event the bunker tanks have the high-level alarms missing or out of order, additional safeguard shall be ordered and instructed accordingly by the Chief Engineer to avoid risk of tank overflow.

Ensure that an Officer-in-charge of the bunkering operation has been designated and adequate personnel have been assigned to assist the operations.

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Arrange for a detailed Bunker Plan inclusive of a drawing of lines and valves to be used.
Establish and maintain communications with the person-in-charge of transferring the bunkers from shore or bunker barge.

Review and agree on procedures for emergency shutdown, topping off tanks and draining of lines, hoses or loading arms.

Maintain watch on mooring and on hose for loose bolts, kinked hose, chafing of hose etc. This may happen as barge rises out of water and lifts hose into horizontal arm of cruciform bit, etc.

12.4 MARPOL Annex IV – Pollution by Sewage from Ships

Discharge at sea is to be in accordance with Regulation 8 of Annex IV of MARPOL as amended.


The discharge of grey and sewage waters from ships is not allowed when the ship is in port or at anchor within their territorial waters. In this case, ships will discharge grey waters and sewage in special tanks or in barges or ashore.

12.5 MARPOL Annex V – Pollution by Garbage from Ships

Solid wastes that may not be discharged at sea in accordance with the relevant requirements are to be discharged at reception facilities ashore. A "Register for the discharge of solid wastes" containing both the procedures for collecting waste products and a register in which to record the discharges of solid wastes ashore is supplied to each ship. Solid garbage may be discharged at sea in accordance with Annex V of MARPOL 73/78 as amended.

The following table summarises the MARPOL Annex V requirements concerning discharges from ships:

GARBAGE TYPE	Outside Special Areas
Food Waste Comminuted or Ground	Discharge permitted ≥3 nm from the nearest land, en route and as far as practicable
Food Waste Not Comminuted or Ground	Discharge permitted ≥12 nm from the nearest land, en route and as far as practicable
Cargo residues ¹ not contained in wash water.	Discharge permitted ≥12 nm from the nearest land, en route and as far as

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Cargo residues¹ contained in wash water.	practicable
Cleaning agents and Additives¹ contained in cargo hold wash water	Discharge permitted
Cleaning agents and Additives¹ in deck and external surfaces wash water	
Carcasses of animals carried on board as cargo and which died during the voyage	Discharge permitted as far from the nearest land as possible and en route
All other garbage including plastics, synthetic ropes, fishing gear, plastic garbage bags, incinerator ashes, clinkers, cooking oil, floating dunnage, lining and packing materials, paper, rags, glass, metal, bottles, crockery and similar refuse	Discharge Prohibited
Mixed Garbage	When garbage is mixed with or contaminated by other substances prohibited from discharge or having different discharge requirements, the more stringent requirements shall apply


12.6 MARPOL Annex VI – Prevention of Air Pollution from Ships

The Annex VI of MARPOL 73 / 78 establish rules to prevent or limit the air pollution caused by the emissions from ships. These provisions affect Ozone-depleting substances like Halon and CFC, Nitrogen Oxides (NO_x), Sulphur Oxides (SO_x), Volatile Organic Compounds (VOC), Shipboard Incineration, Reception Facilities, and Fuel Oil Quality.

12.6.1 Ozone Depleting Substances – HCFC – CFC

The depletion of the ozone layer in the atmosphere is currently the subject of much concern.

Hydro chlorofluorocarbons and chlorofluorocarbons (HCFC and CFC) gases released into the atmosphere are broken down by photosynthesis to release chlorine atoms that, under certain

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atmospheric conditions, catalytically destroy part of the ozone layer. Annex VI prohibits deliberate release of such gases into the atmosphere. A warning notice should be posted in engine room.

The industry's main use of these gases is in cargo refrigeration and insulation.

Although the shipping industry's consumption of CFC gases is small it remains important for our Company to contribute to the avoidance of the environmental damage that can result from release of these gases.

On board refrigerating plant and air condition system must be monitored for consumption of CFC gases and review maintenance procedures and leakage detection to ensure that the accidental atmospheric release of these gases is avoided, whenever is possible utilise recovery and /or recycling facilities where equipment is replaced or sold. The environmental benefit from such policy is supplemented by the added economic advantage of following this course of action.

12.7 Other kinds of pollution to be prevented

12.7.1 Prevention of Noise Pollution

Although the DTP Code of Practice for Noise Levels in Ships defines the latest standards relating to the protection of seafarers, incidents occasionally arise where ships undergoing maintenance and repair in ports and harbours produce noise levels that create a nuisance for adjacent population.

Crewmembers shall be instructed by Master to be sensitive to the need to restrict noise levels in ports where this is likely to prove a nuisance to adjacent population.


The use on board of ear protection is compulsory in all noising space such as Engine room when noisy machineries are running.

12.7.2 Energy conservation. Limitation of atmospheric pollution

The Company is aware of the importance, from the economic and environmental points of view, of the need to reduce, as far as possible, the fuel consumption of ships.

For this purpose, the following should be complied with:

- as far as possible, all internal combustion engines should be made to function under a load corresponding to peak efficiency. Before leaving the port for a new voyage, the Master should therefore plan the speed of the ship so that unnecessary fuel consumption is avoided

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- the Technical Department should, for every voyage, evaluate the fuel consumption of each ship and compare the new values with the old ones in order to ascertain the possible need for hull cleaning
- the Chief Engineer and the Technical Superintendents shall carefully control the performance of the main and auxiliary machinery and provide the necessary maintenance in order to achieve maximum efficiency
- All the Officers and other crewmembers should inform the Engineer Officer on watch (or the Engineer on duty on automated ships) immediately if black smoke is seen coming from the funnel.

12.7.3 Anti-Fouling Paints

The 5 years dry-docking schedules adopted by many shipping companies were made possible by the development of anti-fouling compounds such as SPCs (Self Polishing Copolymers), of which the principal component - Tributyltin (TBT)- has been found to be harmful to certain forms of marine life.

12.7.4 Individual National Regulation and Local Port Requirement


It is Company and Master's responsibility to request information of any more stringent requirements issued by coastal Authorities. Following Requirements and Regulations shall be also complied with if applicable.

12.7.5 Training to Prevent Pollution

Each ship has her own individual characteristics and equipment. Newcomers to a ship need to know what these are and how to deal with them.

A training programme, with special emphasis on the personal duties and responsibilities of the trainee, shall include:

- Familiarising crew members with the ship and its equipment
- Instructing crew members on the use of equipment and pollution free operations
- Demonstrating how to use equipment and machinery that crew members may not be familiar with.
- Monitoring crew member's use of equipment and procedures.
- Stressing Safe and Pollution-free operations during safety meetings.
- Displaying anti-pollution posters
- Providing specific Check Lists
- Watching appropriate videos

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- Conducting pertinent and as much as possible realistic Drills.

12.8 Records and References

- Oil record book part I
- Garbage record book
- Garbage Management Plan
- Marpol Convention 73/78 as amended
- International Convention on the control of harmful anti-fouling systems on ships (AFS)
- ISO14001:2015 § 4.4, 5.2, 6.1, 6.2, 7.2, 7.3, 8.1, 8.3
- List of Environmental aspects and potential impacts



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13 The Accident and Near Miss Reporting

13.1 General

An accident occurs when an undesired or uncontrolled event giving rise to death, illness, injury, damage of ship, damage of the environment, damage of the property, damage of machinery, negative business impact or other loss.

RTG encourages all crew members and shore-based personnel to report any accident or hazardous occurrence as well as violations of environmental requirements. No action will be taken against the reporting persons.

13.2 Responsibilities

The DPA is responsible for:

- reviewing, along with other Key Staff, the reported incident and near-miss reports;
- analysing the same and arranging investigation as appropriate;
- sharing the lesson learned among Company personnel and the Industry as appropriate;
- carrying out structural/environmental incidents analysis with Technical Manager's support.
- Report to the Flag State as necessary


The Master is responsible for:

- reporting to the DPA any incident or near-miss;
- investigating the same to determine their causes and decide appropriate actions;
- implementing and evaluating preventive actions;
- recording the results of corrective/preventive actions taken to review their effectiveness.

Crew members are responsible for:

- reporting any incident or near-miss;
- taking appropriate preventive and corrective actions as per received instructions

Crewing manager is responsible for liaising with Flag Authority, P&I club and local medical authority

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Other Heads of Departments are responsible for ensuring that necessary corrective action is carried out in their respective areas.

13.3 Accident Classification and Reporting

All accidents should be reported timely to the Company. The first report should be done by phone **within 15 minutes** from the event.

As soon as possible a comprehensive report should follow by using the Form S002

Accidents are classified in the following categories:

- Marine work Injuries
- Environmental Accidents
- Structural Accidents
- Machinery Failures


Marine work injury is any sign or symptom of physical damage or impairment to any part of the body directly resulting from an incident regardless of the length of time between the incident and the appearance of the injury. This exclude suicide or attempt suicide, criminal activity and incidents occurred off the ship.

Environmental accidents are:

1. Spillage of mineral oil, noxious substance, sewage in to the sea
2. undue discharge of garbage or dirty dusts at sea;
3. Bunker spill on board
4. air pollution

Structural accidents are:

1. Fire and/or explosion.
2. Damages to the hull caused by cargo movement.
3. Collision with fixed or moving object;
4. Contacts to dock;
5. Hull and pipes failure

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6. Grounding

Machinery Failures are:

Main Engine, steering gear, electrical generators, critical equipment, or any other failure or malfunction that could lead to the need for towing.

13.4 Identification, Reporting and Evaluation of Near-miss

In compliance with the ISM Code requirements under “Hazardous Occurrences”, the reporting and investigation of the near-miss incidents, is a mandatory requirement. The underlying principle of the RTG near-miss reporting policy is of self-governance for the personal safety and the safety of the fellowmen & colleagues. The importance of the policy is communicated through the objectives of the policy and a detailed procedure as described in this Instructions.

13.5 Objectives of the “Near-miss Incidents” Reporting Policy

The key objectives of the RTG Policy on Reporting and Evaluation of Near-miss Incidents are:


- a. To ensure continuous improvement of the Management System without having to learn from the actual accidents;
- b. To enhance individual safety and performance at work;
- c. To discover weaknesses of the operating systems in advance before the occurrence of any accident, thereby avoiding losses and saving costs;
- d. To develop the culture of safe and vigilant work methods; and
- e. To ensure that all employees believe and agree that the reporting of near-miss incidents is not for punitive purposes, but for their benefits and benefits to the Company.

13.6 Definitions of Near-miss Incidents

“Near-miss: A sequence of events and/or conditions that could have resulted in a potential loss to the humans (injury, life, mental shock etc.), property, damage to the environment, marine life, delays to the schedule, breach of contractual terms, reputation of the Company and costs. But the event was prevented from happening either due to divine intervention or unconscious action by any individual”.

The typical cases of the near-miss incidents will exhibit one or more of the following characteristics:

- a. The incident that leads to the implementation of an emergency procedure, plan or response and thus prevented the losses and consequences.

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- b. An event where an unexpected condition could lead to an adverse consequence, but which does not occur.
- c. Any dangerous or hazardous situation or condition that is not discovered until after the danger has passed.

The events like falling objects/cargo from the crane and the persons below had a narrow escape, avoidance of a collision at sea, early detection of a fire by a watchman on duty and to find later that the Fire Detection System was left on manual override, are some of the daily life examples of near-miss events.

13.7 Removal of Barriers to Reporting Near-miss Incidents

The RTG policy is grounded in the concept of the Business Process Management System, and as such the focus is more on reliability of the process design rather than blames on human operators. However, to overcome the fears of punitive measures and or loss of face for reporting any unfortunate incident due to person's carelessness or otherwise, the management encourages the employees to play an active role in ensuring safety at workplaces for everyone. The reporting of near-miss incidents and evaluation is designed such as to assure that:

- a. No punitive action will be taken against anyone involved and or reporting the incident, however it may have been caused, except in case of criminal negligence or intent;
- b. Where necessary, the confidentiality will be maintained so as to avoid any personal clashes or animosity between the colleagues;
- c. Impartial and independent investigations will be carried out systematically, with adequate allocation of resources; and
- d. Findings and recommendations for preventive measures will be distributed across the entire fleet, so that everyone can benefit from the lessons learned as well as avoid the occurrence of such incidents.


13.8 Near-miss and Incident Investigation

Incidents and near misses are investigated to determine **root causes** and **corrective actions** are implemented to prevent recurrence. Hazards and risks are systematically identified and assessed to ensure that risk exposure is effectively managed and considered by the management as necessary.

Quantifiable indicators are used by the company to measure the system's effectiveness and facilitate continuous improvement.

I. Investigation and Root Cause Analysis

- a. Each incident will be first categorised according to the common attributes like, what occurred, who was involved, where, when, what sequence, how it was observed, etc;
- b. Potential losses and severity;

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- c. Likelihood or probability of the occurrence and consequences/losses;
- d. Foreseeability and feasibility of prevention;
- e. Significance of the chain of events and conditions that led to the near-miss;
- f. Identify factors of causation;
- g. Eliminate factors which were apparent but couldn't have caused such an event; and
- h. Potential for reoccurrence, if exists.

II. Report on Findings and Recommendations

The evaluation of a near-miss and incident reporting is concluded only after a detailed report and the set of recommendations have been provided. The **HSEQ Manager** will ensure that the implementation of the recommendations is carried out promptly

In addition, the reports shall also be used during:

- a. Management Reviews;
- b. Trending and statistical analysis of the effectiveness of the Management System; and
- c. Internal and external audit when required.

13.9 Records and References

- Accident or Missed Accident Report – Form S002
- ISM Code § 9
- SBP Section 13 'Non-Conformities, Accidents and Hazardous Occurrences'
- IMO MSC-MEPC.7/Circ.7 – Guidance on Near Miss Reporting
- ISO 9001:2015 § 10.2
- ISO 14001:2015 § 10.2
- ISO 45001:201x § 10.2



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14 Master's Review

14.1 Objectives of the Master's Review

The purpose of the management review is to evaluate the suitability and effectiveness of the Management System in achieving the established objectives and its actual implementation, to detect anomalies and inadequacies of the system, to define actions for improvement and, if deemed necessary, to update the Company Policy and objectives.

14.2 Responsibilities

According to the ISM Code, the Master is responsible to review the management system **every 12 months** and report its deficiencies to the shore-based management. This review shall be carried out in **APRIL** of every year. While reviewing, the Master should consult also the other Officers in order to get as much information as possible and make the review more exhaustive.


The **HSEQ Manager** is responsible to review each Master's Review along with the other Office Key Staff and provide the Master with the Company response. Furthermore, the HSEQ Manager should take into consideration the Masters' feedback to improve the management system and to establish targets.

14.3 Details

The Master Management Review Agenda should include an overview and analysis of at least the following topics:

- Status of Non-Conformities Raised during the Internal audits
- Review of Company Policy and Objectives
- Review of Instructions, Emergency Procedures and other manuals
- Review of forms, checklists and record books
- Planned Maintenance of the vessel and equipment
- Resources and personnel
- Feedback on supplied materials and services
- Customer feedback or claims
- Effectiveness evaluation

The Master shall always state clearly if the Management System is effective and report any suggestion which may help the Company to improve it.

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The master review shall be carried out by using the support and feedback of ship's senior staff.
Master carries out the review using Form RTG-IMS-SYF-004 – Master Review.

14.4 Master Reviews result

The result of Master Reviews will be brought to the attention of those persons attending the first monthly HSEQ Management Meeting and action to be taken will be agreed among the key shore-based staff.


14.5 Records and References

- ISM Code Element 5 and 12
- ShipManager - Master's Review
- ISO45001:201x § 5.4

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15 Risk Assessment & Risk Management

15.1 General

The aim of the risk assessments and of risk management policy is to identify, to mitigate and to manage the risk associated with the operation of the Fleet.

It is the responsibility of RLPL to identify and to assess the risks, to put in place appropriate mitigation measures and to draw guidelines and procedure for the management of the risk.

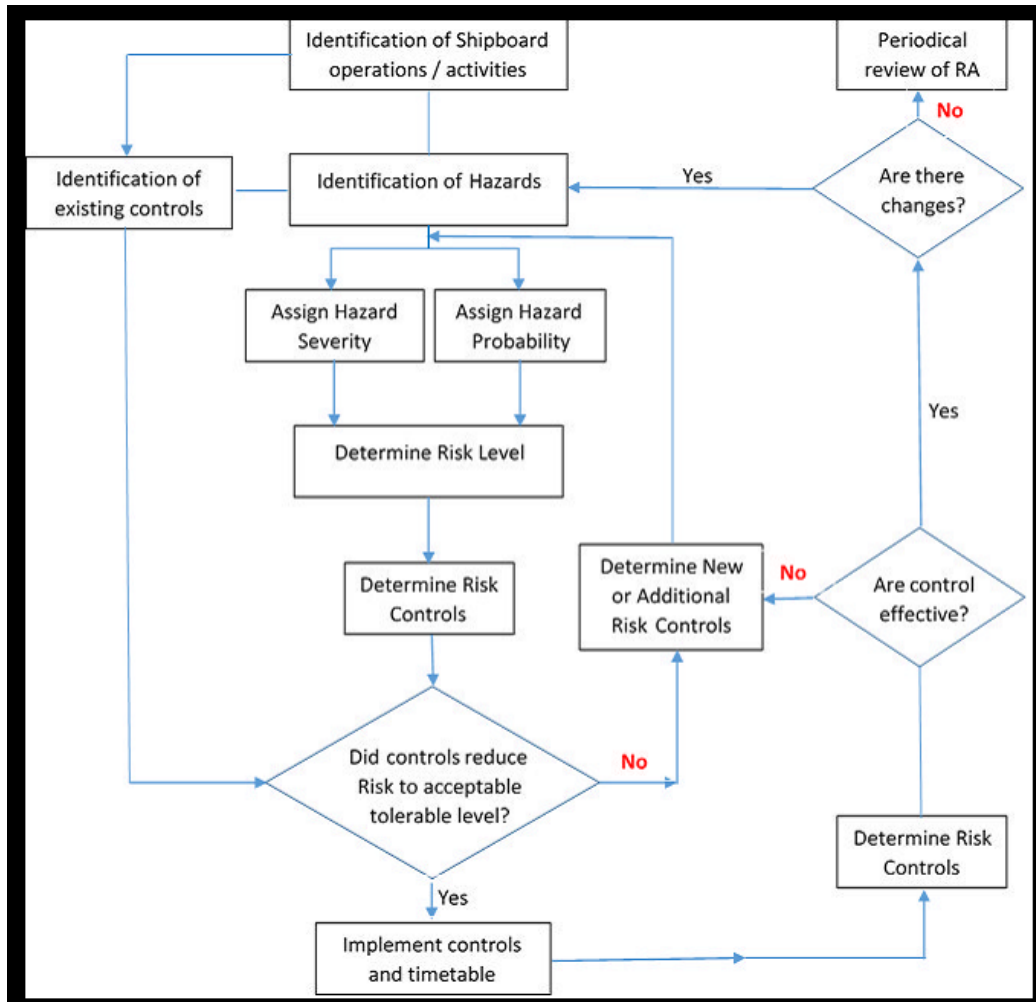
It is the responsibility of the Masters to ensure that risk assessments are duly carried out and that work activities comply with the outcome of the risk assessments.

It is the responsibility of all crew members to adhere to the company procedures and to report any hazardous situation and near miss to the Master.

15.2 Risk Assessment Process

The process adopted for the risk assessment is described in the following flow chart.

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15.2 Operations and Activities

The following table shows the main operations and activities that are conducted within the organization.

Risk Assessments are carried out according to these activities and listed in the Risk Register.

	Operations (Set of Actions to complete a job)	Activities (Set of Actions to complete a job)
Deck Department	Mooring, anchoring and towing	Side by side mooring Towing Anchoring
	Personnel Transfer	Boarding and Disembarkation of Persons

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	Operations (Set of Actions to complete a job)	Activities (Set of Actions to complete a job)
	Deck Maintenance	Chipping and Painting Repairing of Deck Equipment Maintenance of Deck Equipment Hotworks / Coldworks Deck washing and hosing down
	Hull Maintenance	Side Shell Inspection and Maintenance Tanks and Void Spaces Inspection and Maintenance
	Bridge and Navigation	Bad weather
Engine Department	Engine Room operation & Maintenance	Main Engine Generator Mooring winches Windlass Various Pumps Air conditioning system Refrigeration system Ventilation system
Catering Department	Catering	Food handling Food preparation Cleaning and Housekeeping


Routine Activity: activities that are generally performed on a regular basis

Non-Routine Activity: activities that are not generally performed on a regular basis

15.3 Hazards

A hazard is a **situation** or a **potential source** that can cause harm or adverse effects to **life, health, property, or environment**.

The first step in protecting health, safety and environment is to identify the potential hazards associated with the activities and operations.

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Hazards are generally labeled as one of five types

1. **Physical hazards** are conditions or situations that can cause the body physical harm or intense stress. Physical hazards can be both natural and human made elements.
2. **Chemical hazards** are substances that can cause harm or damage to the body, property or the environment. Chemical hazards can be both natural or human made origin.
3. **Biological hazards** are biological agents that can cause harm to the human body. These some biological agents can be viruses, parasites, bacteria, food, fungi, and foreign toxins.
4. **Psychological hazards** are created during work related stress or a stressful environment. A person can be a hazard when he/she is affected psychological disturbance through - stress, shift patterns and also can be a hazard when a person is under the influence of alcohol, illness and lack of training.
5. **Ergonomic Hazard** are physical occupational conditions that may pose risk of injury to various parts of the **musculoskeletal system**, such as the muscles or ligaments of the lower back, tendons or nerves of the hands/wrists, or bones surrounding the knees. Ergonomic hazards include things such as awkward or extreme postures, whole-body or hand/arm vibration, poorly designed tools, equipment, or workstations, and inefficient work method or process.

Note: See Annex 1 for List of Hazards

15.4 Risks

Risk is the chance or probability that a person will be harmed or experience an adverse health effect if exposed to a hazard. It may also apply to situations with property or equipment loss.

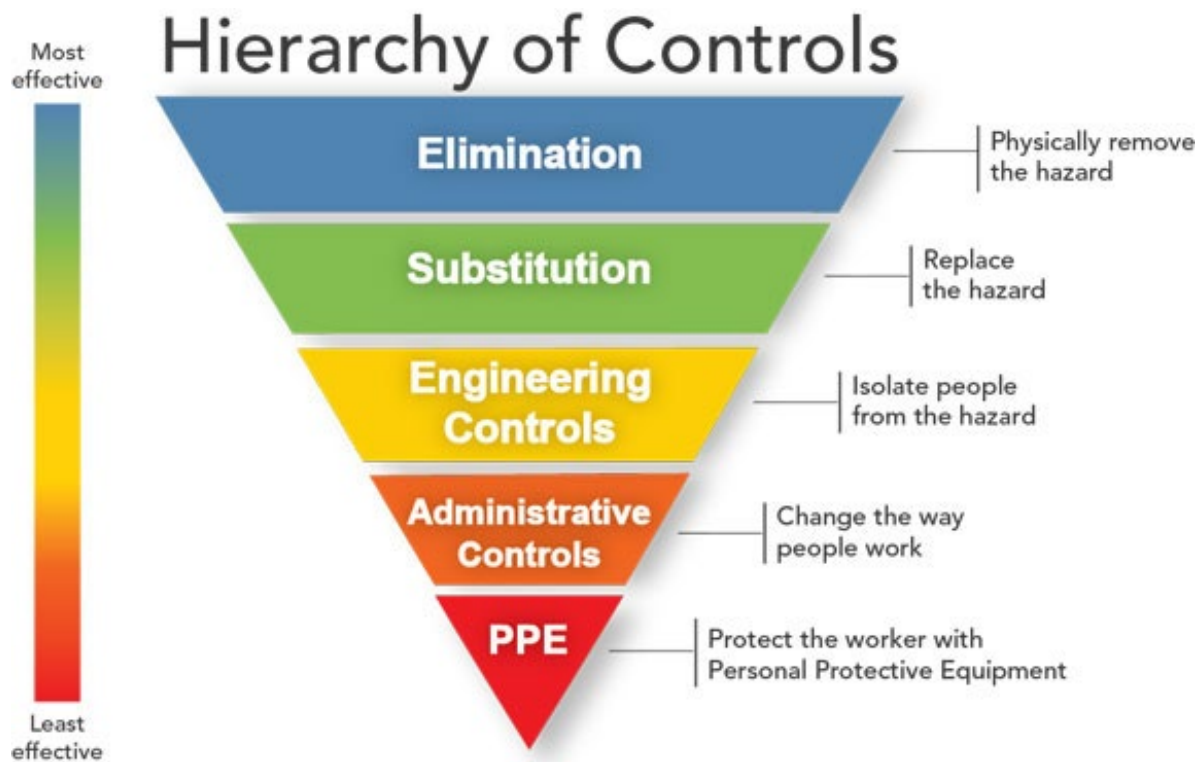
Factors that influence the degree of risk include:

- how much a person is exposed to a hazardous thing or condition,
- how the person is exposed (e.g., breathing in, contact), and
- how severe are the effects under the conditions of exposure?

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15.5 Controls

Control actions should be taken for each single hazard. Controls can be taken to remove or to isolate the hazard as well as to alert about the impending danger.




15.6 Risk Control Methodology

The risk assessment has to be carried out by people with adequate training, experience, knowledge of the vessel and qualifications.

The risk assessment consists of the following phases:

- identification of the hazards associated to each operation;
- Evaluation of the corresponding risks to ship, personnel and environment.

A hazard is a substance, situation or practice that has the potential to cause harm related to personnel, damage to the environment, damage to property, or a combination of these.

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The risks associated to each hazard are evaluated in terms of the likelihood and the potential consequences of each event.

The risk evaluation is carried out taking into account the existing safeguards and risk-reduction measures, which decrease either the likelihood of an event or its consequences, or both.

The ranking of the risks corresponding to the hazardous events is carried out by the following risk matrix.

One of the outcomes of risk assessment is the identification of the need of further risk-reduction measures.

The identification and selection of the risk reduction measures to implement should follow the hierarchical approach below:

- Elimination and minimization of hazards
- Substitution to reduce the probability (prevention of hazardous events)
- Engineering controls (use of guardrails, sensors, etc.);
- Administrative controls (procedures, work orders, work permits, limitation of duration);
- Personal Protective Equipment (protection from effects)

15.7 The Assessment


The company carried out the risk assessment providing it on board. Before initiating any operation, the Master and/or Chief Engineer (as appropriate) has to evaluate if the scenario is the same as assumed in the risk assessment.

In case of different context (for example presence of further hazards, lack of some controls, etc.), the Master and/or Chief Engineer will re-assess the risk to verify if the risk is still acceptable and, if not, to introduce additional necessary reduction measures.

Master shall keep Company informed of any potential new hazard which requires an amendment or updating for the continuous improvement of the Risk Assessment Manual.

When necessary, the Risk Assessment will be reviewed by the Company to include new hazards introduced by variations in organization, technology, working practices, regulatory environment and other factors experienced on board.

Note: *Annex 1 – List of Hazards*
Annex 2 – Risk Assessment Matrix
Annex 3 – Likelihood Table
Annex 4 – Severity Table

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Annex 1 – List of Hazards

PHYSICAL HAZARDS

- ☐ Spills on floors or tripping hazards
- ☐ Work from heights, including ladders, scaffolds, roofs, or any raised work area
- ☐ Unguarded machinery and moving machinery parts;
(guards removed or moving parts that a worker can accidentally touch)
- ☐ Electrical hazards like frayed cords, missing ground pins, improper wiring
- ☐ Confined spaces
- ☐ Machinery-related hazards (lock-out/tag-out, grabs, bulldozers, etc.)
- ☐ Radiation: including ionizing, nonionizing (EMF's, microwaves, radio waves, etc.)
- ☐ High exposure to sunlight/ultraviolet rays
- ☐ Constant loud noise

CHEMICAL HAZARDS

- ☐ Liquids like cleaning products, paints, acids, solvents
- ☐ Vapours and fumes that come from welding or exposure to solvents
- ☐ Gases like acetylene, propane, carbon monoxide and helium
- ☐ Flammable materials like gasoline, solvents, and explosive chemicals.
- ☐ Pesticides


BIOLOGICAL HAZARDS

- ☐ Blood and other body fluids
- ☐ Fungi/mould
- ☐ Bacteria and viruses
- ☐ Insect bites
- ☐ Animal and bird droppings

PSYCHOLOGICAL HAZARDS

- ☐ Workload demands
- ☐ Workplace violence
- ☐ Intensity and/or pace
- ☐ Respect (or lack of)
- ☐ Flexibility
- ☐ Control
- ☐ Social support/relations
- ☐ Sexual harassment

ERGONOMIC HAZARDS


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- ☒ Improperly adjusted workstations
- ☒ Repeating the same movements
- ☒ Frequent lifting
- ☒ Having to use too much force
- ☒ Poor posture
- ☒ Vibration
- ☒ Awkward movements

Annex 2 – Risk Assessment Matrix

LIKELIHOOD OF HARM	SEVERITY				
	Critical (5)	Very Serious (4)	Serious (3)	Marginal (2)	Negligible (1)
Frequent (5)	25 Operation not permissible	20 Operation not permissible	15 High priority	10 Review at appropriate time	5 Risk acceptable
Moderate (4)	20 Operation not permissible	16 Operation not permissible	12 High priority	8 Review at appropriate time	4 Risk acceptable
Occasional (3)	15 High priority	12 High priority	9 Review at appropriate time	6 Risk acceptable	3 Risk acceptable
Remote (2)	10 Review at appropriate time	8 Review at appropriate time	6 Risk acceptable	4 Risk acceptable	2 Risk acceptable
Unlikely (1)	5 Risk acceptable	4 Risk acceptable	3 Risk acceptable	2 Risk acceptable	1 Risk acceptable


Annex 3 – Likelihood Table

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Pt	Likelihood level	Likelihood of Occurrence / Exposure Criteria
5	Frequent	Likely to occur many times per year
4	Moderate	Likely to occur once per year
3	Occasional	Might occur once in three years
2	Remote	Might occur once in five years
1	Unlikely	Might occur once in ten years

Annex 4 – Severity Table


Pt	Severity level	Workplace Safety	Workplace Health	Environment	Damage	Downtime Incurred
5	Critical	Single/multiple fatality, Permanent Body Injury or Loss of Use for more than 30 days	Acute Poisoning, Failure of Major Bodily Functions or Infection with No Known Cure	Oil or pollutant spillage into sea of more than 100 litres / 0.1 m3	More than US\$100,000	More than 1 year for full re-instatement
4	Very Serious	Injury requiring 30 days of medical leave and/or hospitalisation or Loss of Use for more than 10 days but not exceeding 30 days	Moderate exposure, Reversible injury to Bodily Functions on prolong recovery, illness or Infection with Known Cure but extensive treatment	Oil or pollutant spillage into sea between 10 to 100 litres / 0.01 to 0.1 m3	Between US\$50,000 to US\$100,000	More than 3 months for full re-instatement
3	Serious	Injury requiring 10 days of hospitalisation and/or medical leave or Loss of Use for up to 10 days	Mild exposure, Reversible injury to Bodily Functions with less than 30 days' recovery, illness or Infection with Known Cure but extensive treatment	Oil or pollutant spillage into sea up to 10 litres/0.01 m3	Between US\$10,000 to US\$50,000	More than 1 month for full re-instatement
2	Marginal	Injury requiring maximum of 3 days of medical leave only or Loss of Use for 3 days or less	Very Mild exposure, Reversible injury to Bodily Functions with less than 3 days' recovery, illness or Infection with known Cure but treatment needed	Oil or pollutant overflow from Anti-spill container but contained on board	Between US\$1,000 to US\$10,000	More than 5 days for full re-instatement

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Pt	Severity level	Workplace Safety	Workplace Health	Environment	Damage	Downtime Incurred
1	Negligible	No or superficial injury that requires First aid treatment only	No or Very Mild exposure, No injury to Bodily Functions, No illness or Infection	Oil or pollutant spillage contained in container on board	No Structural Deformation or minor cracks or damage less than US\$1,000	No significant downtime


15.8 Records and References

- ISM Code § 1.2.2.2
- ISO 9001:2015 § 6.1, 7.3
- ISO 14001: 2015 § 6.1, 7.3
- ISO45001:201x § 6.1, 7.3
- Risk Assessment Worksheet – Form RTG-IMS-SYF-009
- MCA Code of Safe Practices for Merchant Seafarers

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16 Work Permit System

16.1 Responsibilities

Chief Engineers and Chief Officers are responsible for issuing the work permits in their respective areas. The permit-to-work system is a method whereby safety procedures are specified in writing and disclosed to the individual that will carry out a work of hazardous nature.

Three types of permits are available on board:

- a. Hot works
- b. Cold works
- c. Entering enclosed spaces
- d. Electrical
- e. Working aloft, over side or on staging
- f. Underwater works


16.2 Hot Works

Hot work is any work involving welding, burning, and other work including certain drilling and grinding operations, electrical work and the use of non-intrinsically safe electrical equipment.

Following rules apply depending on the work location:

LOCATION	PERMIT REQUIRED?	OFFICE AUTHORIZATION REQUIRED
Engine Room	Yes	No
Near Bunker Tanks or Pipes	Yes	Yes
Main deck if flammable cargo is carried on board	Yes	Yes
Main Deck if flammable cargo is not carried on board	Yes	No

Technical Manager will review the information received from the master and whenever required they will take additional preventive actions to ensure risk levels are acceptable.

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The work may be initiated only if it can be safely undertaken and after that the Technical Department has given his formal approval and concerned technical comments.

The risk assessment sheet concerning Hot Works must be reviewed in order to ensure that all the hazards have been identified and proper preventive actions taken.

Hot work outside of machinery spaces must take into account the possible presence of hydrocarbon vapours in the atmosphere and the existence of potential ignition sources within a radius of at least 30 meters around the working area.

Before issuing a hot work permit for a work to be done outside machinery spaces, Chief Engineer and Chief Mate should consider the cold work or the moving of the work piece to the engine workshop.

Hot work will be carried out outside the main machinery spaces only if no other alternative exists and whenever it can be safely undertaken.

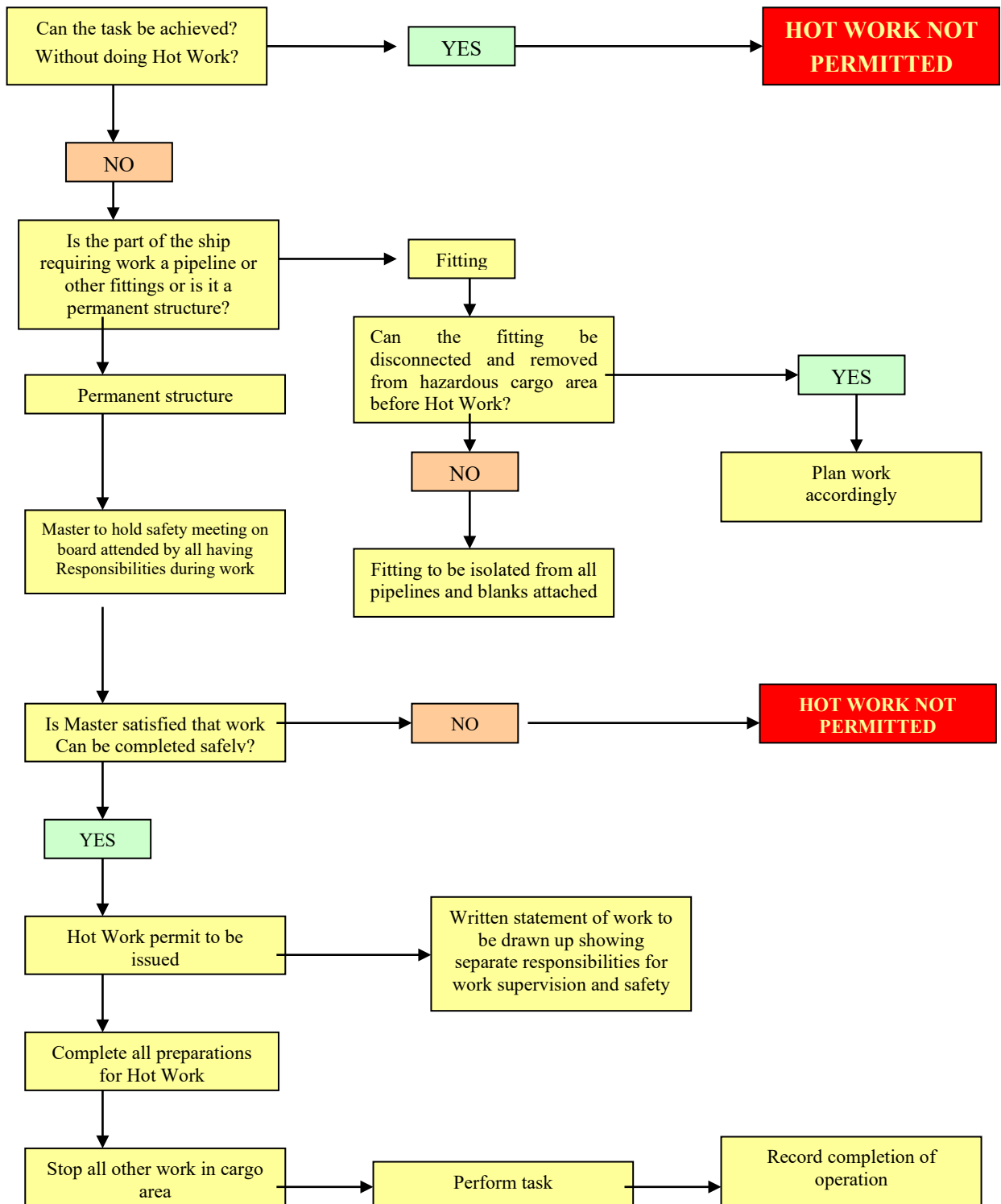
16.2.1 Hot Works on Bunker Pipelines


Hot work on pipelines and valves should only be permitted when the appropriate item has been detached from the system by cold work, and the remaining system blanked off.

The item to be worked on should be cleaned and gas freed to a “safe for hot work” standard, regardless of whether or not it is removed from the hazardous cargo area.

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16.2.2 Hot Works Process



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16.3 Cold Works

Cold Work means any work that does not involve riveting, welding, burning, or other fire or spark producing operations. Chief Mate will issue the permit when the work is going to be performed in hazardous or dangerous area and the work will not involve generation of temperature conditions likely to be of sufficient intensity to cause ignition of combustible gases, vapours or liquids in or adjacent to the area involved.

16.4 Enclosed Space Entry

No one shall enter any tank, cofferdam, double bottom, or other enclosed space unless the Master or a responsible officer has issued entry permit.


Before issuing the permit, the responsible officer ensures that:

- The appropriate atmosphere checks have been carried out. Namely:
 - i. The oxygen content is 20.9% by volume.
 - ii. The hydrocarbon concentration is less than 1% of the Lower Explosion Limit (LEL).
 - iii. No toxic vapours or other contaminants are present.
- Effective ventilation is maintained continuously while the enclosed space is occupied.
- Lifelines and harness are ready for immediate use.
- Breathing apparatus and resuscitation equipment are ready for use at the entrance of the space.
- Where possible a separate means of access is available for use as alternative means of escape in an emergency.
- A responsible crewmember, possibly an officer, is in constant attendance outside the enclosed space.
- The atmosphere should be regularly checked considering 10 meters of radius, during all the time persons are in the enclosed space, using the personal oxygen meter.

If any of the recommendations stated above or on the work permit change or the space become unsafe after the personnel has entered the space, the space must be evacuated immediately.

Permit to re-enter is issued after re-evaluating the situation and restoring the safety conditions.

Maximum period of validity of Entry permit should not exceed a working day (8 hours).

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In the event of an emergency, under no circumstances the attending crewmember enters the enclosed space before help is arrived. The situation has to be evaluated to ensure the safety of people entering the tank to undertake rescue operations.

a Enclosed spaces with atmospheres known or suspected to be unsafe for entry.

If the space has not proved to be safe, entry must be considered only in emergency situation provided that no other practical alternative exists.

If this is the case the personnel who is going to enter the space must be well trained in the use of breathing apparatus and be aware of the danger of removing their masks while in the hostile atmosphere.

When it is absolutely necessary to enter a compartment, whose atmosphere is unsafe or there is a suspect that the atmosphere is unsafe, a responsible officer supervises continuously the operation. He ensures that:


- The Master has issued a permit.
- Ventilation is provided where possible.
- Personnel use positive pressure breathing apparatus.
- The number of persons entering the space is kept to a minimum.
- Means of communications are well established and understood.
- Spare sets of breathing apparatus and resuscitation kit are available outside the space.
- A breathing apparatus will be donned by a crewmember in stand-by outside of the enclosed space.
- All essential work that is to be undertaken or carried out in a manner to avoid ignition hazards.

In case of entries into tank for an annual structural inspection, proper tank cleaning shall be carried out prior to entry.

16.5 Electrical Works

Whenever a work is to be carried out on electrical equipment, a permit to work consisting of the electrical isolation certificate should be issued.

The certificate indicates that the electrical supply of the equipment has been isolated. The Chief Officer issues the isolation certificate shall apply the Lockout/Tagout (LOTO) procedure by putting a safety tag with proper warning on the concerned switches to prevent accidental reconnection of power supply.

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16.6 Working Aloft, Over-side or on Staging

The work aloft/over-side permit must be issued whenever a crewmember or other worker will carry out all works that need more than single handgrips aside of the vessel or on deck above rails, on the mast, in the bosun chair, on staging or at other dangerous places.

The permit will be issued when all requirements listed therein are satisfied.

A Portable ladder should only be used where no safer means of access is reasonably practicable.

Portable ladders should be pitched between 60° and 75°, from the horizontal, properly secured against slipping or shifting sideways. Where applicable, the ladder should extend one meter above any upper landing place unless there are other suitable handholds.

16.7 Underwater Permit

Works carried out by the divers must be always authorised by the Company unless there is an emergency. Before diver commences his work, the Master will satisfy himself that all requirements stated in the permit are observed.

16.8 Records and References

- ISM Code § 7
- ISO 45001:2018 § 5.4
- Hot work permit – Form RTG-IMS-SYF-006
- Cold work permit – Form RTG-IMS-SYF-007
- Enclosed entry permits – Form RTG-IMS-SYF-005
- Electrical Circuit Work Permit – Form RTG-IMS-SYF-010
- Working Aloft permit – Form RTG-IMS-SYF-011
- Underwater permit - Form RTG-IMS-SYF-012



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18 Towing Procedure

18.1 General

Procedure will be used as guideline for the towing activity carried out by tugs.

18.2 Responsibilities

- The Master is responsible for all vessel operation and towage.
- Chief Officer is responsible for preparation of towing, discharge / loading operations to support vessel operation.
- The Chief Engineer is responsible for preparation in the engine room, to vessel operation.

18.3 Inspection of Cargo/Equipment/Barge

1. Cargo / Equipment / Barge to be towed must be inspected:

- a. The towing equipment must be inspected to ensure it meets requirements and an acknowledgement is to be
- b. All defective parts must be reported and repaired, as best as possible otherwise replaced
- c. Before commencement of tow, check the following:
 - Barge draft, trim, and stability where it's possible.
 - Barge hull, side boards and coaming, clear of any damages Towing winch and towing rope Towing pins or hydraulic jaws (if fitted) and towing gear.
 - Towing outfitting gear includes gob wires, bridles, chains, pennants, eye plates, towing rings and shackles, barge anchor (if fitted), barge lights.


2. Barge secured position (berth)

- When the barge is secured / made fast (berth), checking the tide, rope, spring rope fore and aft and ensure the barge is in hire and all mooring ropes intact.
- Provide lighting as necessary.
- Keep the tug alongside barge on a safe position and with at least two ropes secured (one aft and one fwd)

18.4 Preparation and Towage

1. Chief Officer will prepare for towage as follows:


- a. Ensure towing winch-ready for use. Emergency release tested.
- b. Bridle to connect tow hook to long tow line is prepared on deck at the back of the tugboat.
- c. Install end of bridle and connect with shackle to the end of long towline on deck.
- a. Prepare long tow line on deck and arrange such that it will be easy to release when tow commences.
- d. Prepare shackle to connect to end of long tow line to end of short towline.

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- e. Prepare a towing bridle connected to the primary towing. Connect the towing rope to the barge's bridles by another shackle.
2. After all preparation has been carried out, Chief Officer will inform to Chief Engineer to prepare main engines and report to Master.
3. Length of tow line at commencement
 - 3.1 When vessel starts to move, install end of short towline (second tow) to towing hook of tugboat and the bridle that was installed on the tow.
 - 3.2 The length of the towline at commencement, including short towline and bridle, should be about 50 meters. This procedure should also be used in narrow navigating channels.
4. Length of towing line at open sea
 - 4.1 At open sea, the short towline and the end of the long towline are joined using shackle. The line is then released as the tugboat moves ahead slowly.
 - 4.2 Length of tow line at open sea is one coil tow line (600 ft = 180 meters) and add the short tow line (75 meters) so that the total length is 255 Meters.
 - 4.3 When the tow line is tight and surrounding safe, tugboat may move ahead at full speed.
5. Procedure prior to arrival - shorten the tow line
 - 5.1 Reduce speed, direct front part of vessel directly against wind direction of wind, wave and current to ensure that the tow line does not get tangled in the propellers.
 - 5.2 As the speed is reduce, the towline will slack and immediately retrieve the line back onto the tugboat and lay the ropes in order on deck.
 - 5.3 After the long towline is retrieved, release the shackle joining the short towline and hook the short towline onto the towing hook.
 - 5.4 If the barge will be berth or anchored, the tugboat will transfer crew to the barge.
6. Ensure towline does not get tangled
To ensure that the towline does not get entangled with the propellers during all operations, a crew member must be stationed at the back part of the tugboat.

18.5 Release a towage

1. To let go the short tow line, tugboat will come closely to the bow of the barge, so the towing rope will come slack, then will be cast off from tug's
2. Barge at anchor and alongside jetty or vessel
There are 3 effective manoeuvring methods:
 - a. To have the proper control of the revolution of the barge, the tugboat will deploy and use the secondary short towing line secured to the barge:
 1. Tug on forward of the barge same as towing convoy, at distance of 50 meters.
 2. Anchored the barge can be carried out against current and etc, according to the condition of local channel. For berthing as well with barge again the current will be easier to control the transversal shifting toward jetty.

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3. Control speed when vessel is being alongside the tow and keep a safe distance from the jetty. Once approach the crew on board barge will send the fwd and aft ropes to made fast all to the jetty. After that tug will be released.
 - a. Alongside of barge by tow in tandem.
 1. tugboat will made fast rope at astern of the barge either portside or starboard side / spring to fore part and aft part of the barge.
 2. Control the barge as per conditioning local channel, Chief Officer together with part of crews must in position on the barge.
 3. Chief Officer will give signals from forward of barge that barge approaching jetty
3. Alongside of barge by tow from behind.
 - a. Position of tugboat at after of barge, made fast the rope from forward of tugboat port / starboard to after of barge port / starboard.
 - b. Then make fast the spring port / starboard from behind of tugboat to barge port / starboard or bow alongside.
 - c. After ropes strongly and safely made fast, the next step is to push the barge alongside port / starboard or bow alongside.
 - d. As the bow comes alongside, the ramp door will be lowered. Once the barge will be in position will be deploy the ropes from fwd and from aft to firmly secure the barge.
4. Release after alongside

To cast off barge from jetty or vessel, the tug will approach, in order to send her crew on board the barge, that will made fast tug first and then start to release all ropes fwd and aft; once barge will be clear from ropes, tug will start to pull it from jetty.


18.6 Emergency and others

1. Emergency planning


A prudent towing plan includes 'what if' situations, unexpected events that could happen during the tow. This preparation could be a formal plan for specific contingencies and/or training. Consideration should always be given on how to transfer personnel and equipment to the towed vessel or unit during an emergency. Personnel should always wear life jackets and utilise communication equipment and portable lights during darkness. The safety of personnel is paramount, and a transfer should not go ahead if considered too dangerous.

Contingency plans could include the following:

- a. Girting or girding situation
- b. Failure or parting of the tow wire.
- c. Failure of wire arrangements.

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- d. Grounding of the tug or tow.
 - e. Loss of hull integrity in either tug or towed vessel.
 - f. Allision or contact with a fixed object or installation.
 - g. Loss of main propulsion power or electrical power.
 - h. Failure of steering and/or other critical control systems.
 - i. Man overboard.
 - j. Bridge, accommodation, or engine room fire.
 - k. Actions to take in the event of unexpected poor weather
- 2- Navigation under towing
- a. The movement should be slow. Towing line turn because the ship moves on to anticipated tow rope length delay. Length towing coupling up to the wisdom of leadership.
 - b. When the required length has been reached, moving at a minimum speed before picking up speed. Preventing sudden tightening.
 - c. To avoid the towed ship when his turn to throw or lift anchor, the ship's position who took careful against the rising tides or winds. Master should relate to the tow vessel is not tethered.
3. Let go towing
- Master must decide the best way in terms of tow disconnection, consider the following factors:
- a. Speed vessel towed slowly enough or stopped.
 - b. Enough revolving area for sea navigation.
 - c. Traffic
 - d. As a result of wind, sea currents and waves on irregularities ship is towed.
 - e. Location of the vessel is towed intends dock.
4. Tow Emergency and Rescue.
- a. When receiving an urgent call for help or to perform a rescue, the Master must consider the following things:
 - 1. Conditions, performance limitations of the tug
 - 2. The size of the vessel requesting assistance.
 - 3. Readiness and condition of the towing equipment.
 - 4. Weather condition
 - 5. Contractual / Commercial obligation
 - b. If the Master is satisfied that the ship is able to arrange the assistance/rescue , he should contact the Port Captain's approval.
5. Avoid Injuries to persons
- To mitigate the risk of any accident / incident to crew, the Master must evaluate entire scenario and take in the proper consideration, any possible risk and counter measurement to eliminate or reduce such risk avoiding unnecessary act that put crew on danger situation:
- 1. Brake of towing rope
 - 2. Allision or collision to the vessel to be rescued

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3. Rough sea
4. Sleeper surfaces
5. Exposure to the emergencies on board vessel
6. Towing at Bad Weather
 1. As far as possible avoid towing operations in bad weather.
 2. Bad weather should be monitored at all times, in the following ways:
 - a. Forecast every day.
 - b. Hurricane, Tropical storm observation
 - c. Master must notify the Company and the Charterer if action is taken to avoid any bad weather zone

18.7 Records and References

- ISM Code § 7
- ISO 9001:2015 § 8.1
- ISO 14001:2015 § 8.1
- ISO 45001:201x § 8.1