SHIPBOARD MAIN MANUAL

Contents

CHAPTER 01 – INTRODUCTION & DOCUMENT CONTROL

1.1 Introduction

The **Shipboard Main Manual (SMM)** of **GLOBAL TANKERS PVT. LTD.** serves as the **primary reference for shipboard operations**, ensuring:

- **Safe, efficient, and compliant shipboard procedures**.
- Alignment with **ISM Code, SOLAS, MARPOL, and company-specific policies**.
- Standardized **operational and emergency procedures**.

This manual must be **read, understood, and implemented** by **all officers and crew**.

1.2 Structure of the Manual

The SMM consists of **ten chapters**, each covering essential operational aspects:

Chapter	Topic
1	Office Organization Chart
2	Shipboard Management – Duties & Responsibilities
3	Navigation & Bridge Watchkeeping Procedures
4	Engineering Practices & Procedures
5	Communication
6	Code of Practice for Towage Operations
7	Preparation for Dry Dock & Certification Surveys
8	Bunkers, Lube Oils, Provisions, Stores & Inventories

Chapter	Topic
9	Health / Medical
10	Records / Files
11	Risk Assessment

All personnel must be **familiar with the relevant chapters** based on their **rank and responsibilities**.

1.3 Document Control & Updates

To maintain accuracy and compliance, the manual is subject to **periodic updates**.

1.3.1 Responsibilities for Manual Updates

- **Master:** Ensures that the manual is **kept up-to-date** at all times.
- **Company Head Office:** Issues **correction sheets and revisions**.
- **Shipboard Personnel:** Must **promptly implement updates** and **destroy obsolete versions**.

1.3.2 Updating Procedures

- When a **revision is received**, the Master must:
    1. **Remove and destroy outdated pages**.
    2. **Insert updated pages** as per the **Document Serial Correction Sheet**.
    3. **Log the update in the Document Serial Correction Sheet**.
    4. **Ensure all officers acknowledge the update**.

DOCUMENT SERIAL CORRECTION SHEET				
REVISION NO.	**ISSUE DATE**	**CORRECTED PAGES**	**DATE INSERTED**	**INITIALS**
01	**29.01.2023**	**Pg. 3 Chapter 01**	**29/01/2023**	Capt. J. Rozario
01	**29.01.2023**	**Pg. 1 Chapter 12**	**29/01/2023**	Capt. J. Rozario
01	**29.01.2023**	**Contact Details Appendix III**	**29/01/2023**	**Capt. J. Rozario**
01	**01.01.2024**	**Contact Details Appendix III**	**01/01/2024**	**Capt. Gopal**
01	**01.01.2025**	**Contact Details Appendix III**	**01/01/2025**	**Capt. Navjot Singh**

1.4 Verification & Acknowledgment

1.4.1 Verification Chart

All shipboard personnel must read, understand, and acknowledge the manual.

NAME	RANK	DATE	REMARKS	SIGNATURE

1.4.2 Rank-Based Reading Requirements

- **Master / Chief Engineer – Full Manual (All Chapters)**
- **Deck & Engineer Officers – Full Manual**
- **All Crew – Chapter 9 (Health & Medical)**

Each officer must document their understanding in the verification chart.

The Chapters read & understood to be filled in the REMARKS column.

COMPLIANCE CHECKLIST – INTRODUCTION & DOCUMENT CONTROL

✅ Manual Structure & Awareness
- ☐ Ensure all crew are familiar with the relevant chapters of the manual.
- ☐ Verify that officers and crew acknowledge their responsibilities.

✅ Document Control & Updates
- ☐ Ensure outdated versions are removed and destroyed upon revision.
- ☐ Maintain an updated Document Serial Correction Sheet.
- ☐ Verify that officers have acknowledged the latest updates.

✅ Verification & Acknowledgment
- ☐ Confirm that all personnel have completed the Verification Chart.
- ☐ Ensure rank-based reading requirements are followed.
- ☐ Conduct periodic reviews to confirm compliance with updates.

CHAPTER 02 – DUTIES AND RESPONSIBILITIES

2.0 Allocation of Responsibilities

- Responsibilities are allocated as per Minimum Safe Manning Certificate (MSMC) and operational requirements.
- If only the Master is onboard, they assume sections 2.02, 2.03, and 2.08.
- If only the Chief Engineer is onboard, they assume sections 2.05, 2.06, and 2.07.

2.1 The Master

2.1.1 Overall Responsibility & Overriding Authority

- The Master has ultimate responsibility for the vessel, crew, and cargo.
- The Master has **overriding authority** and must take any necessary actions to ensure the safety of the ship, crew, cargo, and the environment.
- In an emergency, the Master may deviate from company policies and procedures as per ISM Code 5.2.
- Any deviations must be recorded and reported to the company with justifications.
- The Master has overriding authority and responsibility to make decisions concerning safety and pollution prevention. In an emergency, the Master has the discretion to deviate from company procedures when necessary to safeguard human life, property, or the environment. Any such action shall be recorded and reported to shore management.

2.1.2 Authority to Reallocate Duties

- The Master has the authority to reassign duties if required by operational demands.

2.1.3 Responsibilities

- Ensures compliance with ISM, SOLAS, MARPOL, STCW, MLC 2006, and company policies.
- Conducts navigational oversight, passage planning, and safety management.
- Responsible for commercial obligations, cargo operations, and documentation.
- Ensures crew fatigue management and compliance with MLC 2006 & STCW.
- The Master must ensure that emergency drills, including fire, abandon ship, enclosed space entry, and pollution response drills, are conducted as per company policies and SOLAS regulations. The effectiveness of these drills must be reviewed, and corrective actions should be implemented if any deficiencies are found.

2.1.4 Change of Command

- Conducts handover procedures when changing command.
- Documents vessel conditions, ongoing maintenance, and pending issues.

2.1.5 Duties

2.1.5.1 Navigation

- Ensures the safe passage of the vessel.
- Maintains proper voyage planning and execution.

2.1.5.2 Ship Handling

- Handles maneuvering operations during port arrivals, departures, and emergencies.

2.1.5.3 Inspections

- Conducts regular inspections to maintain ship seaworthiness.
- Ensures proper hull, machinery, and deck maintenance.

2.1.5.4 Commercial Representation

- Represents the company in port interactions, customs, and charter agreements.

2.1.5.5 Safety & Training

- Ensures safety drills and crew training are conducted as per schedule.

2.1.5.6 Port Documentation

- Maintains all required port clearance, customs, and regulatory paperwork.

2.1.5.7 Crew Management

- Ensures compliance with ISM, SOLAS, MARPOL, STCW, MLC 2006, and company policies.
- Conducts navigational oversight, passage planning, and safety management.
- Responsible for commercial obligations, cargo operations, and documentation.
- Ensures crew fatigue management and compliance with MLC 2006 & STCW.
- The Master must ensure that emergency drills, including fire, abandon ship, enclosed space entry, and pollution response drills, are conducted as per company policies and SOLAS regulations. The effectiveness of these drills must be reviewed, and corrective actions should be implemented if any deficiencies are found.

2.1.5.8 Bunkers & Fresh Water

- Ensures proper fuel and water management.

2.1.5.9 Performance Monitoring

- Tracks fuel efficiency, voyage progress, and operational KPIs.

2.1.5.10 Acceptance of Liability

- Reports and documents any incidents, claims, or disputes.

2.1.5.11 Maintenance

- Oversees preventive maintenance and ensures compliance with repair schedules.

2.2 The Chief Officer

2.2.1 General Responsibilities

- Directly responsible for deck operations and cargo handling.
- Ensures cargo handling and securing in compliance with SOLAS Chapter VI.
- The Chief Officer is responsible for ensuring that all cargo handling, securing, and stability calculations comply with SOLAS Chapter VI requirements. The vessel's stability condition must be verified before departure and upon arrival at a port.

2.2.2 Safety Responsibilities

- Conducts safety meetings, risk assessments, and drills.

2.2.3 Record-Keeping

- Maintains logbooks, safety reports, and cargo documentation.

2.2.4 Personnel Management

- Supervises deck crew, ensuring proper workload distribution and training.

2.3 Junior Officers (2nd & 3rd Officer)

2.3.1 General Responsibilities

- Assist in navigation, cargo handling, and deck maintenance.

2.3.2 Safety Duties

- Conduct fire and safety rounds as per company policies.

2.4 Chief Engineer

2.4.1 General Responsibilities

- Maintains engine room operations and compliance with safety protocols.

2.4.2 Engineering Practices

- Ensures optimal fuel efficiency, machinery performance, and emissions compliance.
- Monitors compliance with MARPOL Annex VI regarding SOx, NOx, and CO2 emissions.
- Ensures periodic fuel sampling and emission control compliance.
- The Chief Engineer must ensure that fuel consumption is optimized and recorded as per MARPOL Annex VI requirements. Compliance with SOx, NOx, and CO2 emission regulations must be verified, and fuel sampling must be conducted for regulatory authorities.

2.4.3 Disciplinary & Reporting

- Reports technical defects and maintenance needs.

2.4.4 Change of Appointment

- Conducts a handover report detailing machinery conditions and pending repairs.

2.4.5 Duties

- Supervises engine room staff and ensures equipment functionality.
- Monitors fuel and lube oil consumption.
- Maintains technical records and submits reports to shore management.

2.5 Second Engineer

- Assists the Chief Engineer in engine room operations.
- Oversees maintenance of auxiliary engines and systems.

2.6 Junior Engineers (3rd & 4th Engineer)

- Responsible for daily machinery checks and reporting issues.
- Assists in preventive maintenance tasks.

2.7 Electrician

- Conducts electrical system maintenance and repairs.
- Ensures switchboards and generators are functioning optimally.

2.8 GMDSS Officer

2.8.1 Responsibilities

- Maintains radio and communication systems.
- The GMDSS Officer shall ensure that shipboard communication systems are protected from cybersecurity threats. Unauthorized access to GMDSS equipment must be prevented through password controls and restricted physical access.

2.8.2 Log Keeping

- Keeps an updated GMDSS log for regulatory compliance.

2.8.3 Essential Tests

- Conducts routine testing of emergency communication equipment.

2.8.4 Equipment Demonstration

- Trains crew on emergency radio operations.

2.8.5 Maintenance

- Ensures contracted shore-based GMDSS maintenance is completed.

2.9 Port State Control and External Audits

- The Master and Chief Engineer are responsible for **coordinating with Port State Control (PSC)** and **other regulatory authorities during inspections**.
- All crew members must be **briefed on PSC expectations**, and the vessel must be maintained in a **state of readiness for inspections at all times**.

COMPLIANCE CHECKLIST – DUTIES & RESPONSIBILITIES

✅ **Master's Responsibilities**

- ☐ Verify that voyage planning and navigation are conducted safely.
- ☐ Ensure crew training and emergency drills are completed on schedule.
- ☐ Maintain all regulatory documentation and reporting.

✅ **Chief Officer & Junior Officers**

- ☐ Ensure safe deck operations and cargo handling.
- ☐ Conduct fire safety rounds and emergency preparedness checks.

✅ **Chief Engineer & Technical Staff**

- ☐ Monitor fuel efficiency and preventive maintenance schedules.
- ☐ Ensure all machinery is operational and defects are reported.

✅ **GMDSS Officer**

- ☐ Perform routine radio tests and maintain GMDSS logs.
- ☐ Train crew in emergency communication procedures.

CHAPTER 03 – NAVIGATION & BRIDGE WATCHKEEPING

3.1 General Principles of Bridge Operations

3.1.1 Definitions

Conn

- The officer controlling the ship's speed and direction must clearly announce, "I have the conn."
- Conn includes giving helm and engine orders.
- Only the OOW, Master, or Pilot may hold the conn.

Thinking Aloud

- Verbalizing the current situation and intended actions to improve situational awareness.

Heavy Traffic / High-Density Traffic

- Defined where a **risk of collision frequently exists**.
- **Collision Prevention Actions**: Adjust speed and course.
- **Thresholds**: CPA and TCPA limits per company policy.

Navigation Zones

- **Open Sea**: No pilotage, >12 nm from shore, water depth >3x draft, no marked way.
- **Restricted/Coastal Waters**: <12 nm from shore, depth <3x draft, no marked way.
- **Confined/Enclosed Waters**: Pilotage required, close to shore, defined traffic schemes.

Operational Modes

- **Harbor Mode (HM)**: Ship berthed safely.
  - Bridge: Radars standby, AIS low power, Nav lights off.
  - Engine: One auxiliary engine running (if no shore power).
- **Anchor Mode (AM)**: Ship at anchor.
  - Bridge: Radars on, AIS on, navigation lights on.
  - Engine: One auxiliary engine running (if no shore power).
- **Manoeuvre Mode (MM)**: Pilotage or restricted waters.
  - Used in: **Dover Straits, Malacca Strait, Torres Strait, Gibraltar, Suez/Panama Canal, Hormuz, Bab el Mandeb and constricted navigational waters.**
  - Bridge: Both radars operational, all equipment running.
  - Engine: Two steering pumps, additional generators, thrusters engaged.
- **Sea Mode (SM)**: Open sea, free navigation.
  - Bridge: One radar running, echo sounder may be off.
  - Engine: One steering pump active.

Special Navigation Conditions

- **Congested Waters**: Heavy traffic near hazards; ship has limited manoeuvring room.
- **Restricted Visibility**: Visibility <4 nautical miles.
- **Heavy Weather**: Wind force **BF 6+** or waves **>3 meters**.

3.1.2 Bridge Resource Management (BRM) & Team Coordination

Purpose

- Effective use and coordination of human, technical, and procedural resources.
- Primary goal: **Eliminate "one-person errors."**
- Pilots are part of the Bridge Team and must be supported.

Bridge Team Key Responsibilities

- Watch Conditions: Proper watch levels assigned.
- Use of Equipment: All navigational resources deployed.
- Manoeuvring Awareness: Understanding ship behaviour.
- Managing Stress & Distractions: Ensure focus and clarity.
- Effective Team Communication: Open and structured information sharing.

- Pilot Information Exchange: Clear guidance and collaboration.
- Use of Checklists: Standard operational and emergency checklists in place.

Bridge Team Meeting Topics

- Discuss passage plan before sailing.
- Address challenges: heavy traffic areas, shallow waters, speed restrictions.
- Assign responsibilities for emergency handling.

3.1.3 Working Language

- **English** is the official bridge language and language onboard.
- This must be recorded in the Deck Log Book (as per SOLAS 74, Regulation 14).

3.1.4 Bridge Organization

Master

- Holds ultimate responsibility for the safety of the ship, crew, cargo, and navigation.
- Ensures compliance with all navigation and safety procedures.
- Exercises overriding authority to act in the best interest of safety when required.

Officer of the Watch (OOW)

- Manages the Bridge Team and is accountable to the Master for the safe navigation of the vessel.
- Ensures compliance with the passage plan and company procedures.
- Maintains constant situational awareness and assesses risks while underway.

Pilot

- Provides local navigational expertise.
- Assists in manoeuvring the vessel within pilotage waters.
- The Master remains responsible for the ship's safe navigation

Lookout

- Maintains continuous all-round vigilance by sight and hearing.
- Reports all visual sightings and sound signals immediately to the OOW.
- Assists in identifying navigation hazards, vessels, and environmental changes.

Helmsman

- Acknowledges and executes steering instructions given by the OOW.
- Monitors helm response and informs the OOW of any steering concerns.

Cadets

- May assist in any bridge position for training purposes only.
- Any assigned task must be supervised by the responsible officer to ensure safety and competency.

3.1.5 Responsibility of the Master

- The Master has overall command of the vessel's navigational operations, safety, crew, and property.
- Responsible for the application of procedures and has the authority to amend or improve them based on the ship's requirements, operational area, and any limitations.

- Ensures that watch officers are fully familiar with the procedures, navigational systems, and bridge instrumentation.
- The Master is in full charge of the Bridge Team, whether present on the bridge or not.
- When absent, delegates responsibility and authority to the Officer of the Watch (OOW).
- Has overriding authority to take any action necessary for the safety of the ship and company interests.
- The Master must not be constrained by the company or charterer when making decisions critical to navigation safety.
- Ensures that all relevant records are maintained and updated as soon as possible after an event.
- The bridge movement book must be used to record events in real-time.
- The Master must ensure that no meetings are conducted on the bridge except for navigation & passage plan briefing/debriefing.

3.1.6 Factors Determining the Composition of the Bridge Team

The Bridge Team must be adequately staffed to meet the operational requirements of the passage plan. The bridge must never be left unattended at sea or at anchor.

When determining the Bridge Team composition, the Master must consider the following:

- Visibility, sea state, and weather conditions.
- Daylight or nighttime conditions.
- Traffic density, including fishing vessels, pleasure crafts, and crossing ferries.
- Ongoing activities in the ship's navigation area.
- Navigation near Traffic Separation Schemes (TSS) or routeing measures.
- Proximity to navigational hazards.
- Operational and security requirements, including anticipated maneuvers.
- Bridge equipment operational status, including alarms.
- Use of manual or automatic steering.
- GMDSS duties and communication responsibilities.
- Unusual demands on the watch due to exceptional circumstances.
- Compliance with company standards, procedures, and international regulations.

The Master must ensure that these factors are continuously monitored and adjustments are made when necessary to maintain safe navigation.

3.1.7 Bridge Team Leadership, Resource Management, Teamwork, and Coaching

The performance of the Bridge Team depends on strong leadership, teamwork, and effective resource management. These principles are mandated under the STCW Convention, requiring Bridge Resource Management (BRM) training for watchkeeping officers.

A well-briefed Bridge Team anticipates hazards, prevents errors, and ensures safety by maintaining situational awareness and recognizing developing risks.

3.1.7.1 Key Responsibilities of the Bridge Team

The Bridge Team must:

- Report important information routinely to the Master.

- Keep the Master fully informed of critical navigational and operational conditions.
- Know when to call the Master (Refer to Checklist VO-48).

To identify and prevent errors, a culture of open communication is essential. Team members should be encouraged to raise safety concerns without fear of reprisal.

3.1.7.2 Encouraging Situational Awareness

To maintain high situational awareness, Bridge Team members must:

- Filter and prioritize information to avoid distractions.
- Identify developing hazards and close-quarter situations.
- Continuously assess sea room and Under Keel Clearance (UKC).
- Monitor changing traffic situations and adapt accordingly.
- Prioritize threats and not lose focus on other risks.
- Delegate tasks to maintain concentration, especially when conning the vessel.
- Adjust for speed, set, and drift effects when altering course.
- Remain vigilant in twilight and darkness when visibility is reduced.

3.1.7.3 Competency and Decision-Making

Bridge Team members must demonstrate confidence in their duties, including:

- Bridge Resource Management (BRM).
- Effective decision-making under pressure.
- Issuing clear and concise orders.
- Managing and coordinating the Bridge Team.
- Recognizing and responding to developing situations.
- Taking early action to prevent hazardous conditions.
- Handling external communications professionally.
- Interfacing with the engine room for operational readiness.
- Cooperating with the Pilot to ensure safe passage.
- Understanding vessel maneuvering characteristics, including any ship-specific quirks.
- Calling the Master when necessary.

3.1.7.4 Coaching, Training, and Mentoring

- Active coaching and mentoring must be encouraged to improve skills.
- Officers should understudy higher roles to be prepared for promotions.
    - Example: The Third Officer should actively learn from the Second Officer (Navigator).
- The Master should provide hands-on training in:
    - Ship handling and maneuvering.
    - Company navigation procedures.
    - Familiarization with bridge equipment.
    - Effective communication techniques.
- Junior officers must be trained to repeat helm orders correctly and follow best practices.

3.1.7.5 Training in Restricted Waters

- The Master must carefully select training opportunities in restricted waters.
- When allowing an officer to maneuver in these conditions, the Master must monitor the officer closely to ensure vessel safety.

A well-led Bridge Team with structured training and clear communication significantly enhances navigation safety and efficiency.

3.1.8 Bridge Team Communication and Decision-Making

The Bridge Team consists of all personnel with bridge watchkeeping or advisory duties. The Officer of the Watch (OOW) is responsible for assigning and clarifying each team member's role to ensure safe and efficient navigation.

3.1.8.1 Bridge Team Roles and Responsibilities

- Master – Holds ultimate responsibility for the safety of the ship, crew, and operations.
- Officer of the Watch (OOW) – Manages the Bridge Team, ensures safe navigation, and is accountable to the Master.
- Pilot – Provides local navigational expertise to assist in maneuvering the vessel.
- **Lookout** – Maintains continuous observation using sight and hearing and reports all sightings or sound signals to the OOW.
- **Helmsman** – Acknowledges and executes steering instructions from the OOW and reports any steering concerns.

3.1.8.2 Effective Teamwork and Coordination

The Bridge Team should function as a unit, ensuring a professional and comfortable working relationship between the Master, OOW, and watchkeepers.

Key principles for an effective Bridge Team:

- Hierarchical barriers should not prevent questioning, intervention, or raising concerns.
- Assistance should be requested immediately if there is any doubt about a situation.
- Each member must support the team as a whole to enhance overall efficiency.
- Active coaching, training, and mentoring should be practiced regularly.
- Effective decision-making must be ensured at all times.
- Proper planning and distribution of workload prevent fatigue and improve efficiency.

3.1.8.3 Decision-Making Process

Decisions must be clear, justified, and communicated in a timely manner. The Master retains ultimate authority, but every team member should contribute to decision-making when required.

The decision-making process should:

- Ensure unambiguous and well-explained instructions.
- Address doubts immediately to prevent misunderstandings.
- Encourage team members to question decisions that may pose risks.
- Follow the company SMS and COLREGS at all times.
- Allow the Master to exercise overriding authority when safety is at risk.

3.1.8.4 Pilotage and Bridge Team Responsibilities

Having a Pilot on board does not relieve the Master or the Bridge Team of their responsibility for the ship's safety and pollution prevention. The Bridge Team must continue actively monitoring the vessel's position, speed, and surrounding traffic.

Additional guidance on effective pilotage procedures and roles during pilotage is detailed.

3.1.8.5 Reporting and Monitoring Performance

Encouraging proactive reporting allows the OOW to monitor the Bridge Team's effectiveness and identify potential performance issues before they affect navigation safety.

The OOW should:

- Monitor the Bridge Team's alertness and ability to handle workload.
- Ensure that critical events and unusual occurrences are reported without hesitation.
- Encourage a culture of continuous improvement and situational awareness.

An efficient Bridge Team operates with clear roles, structured decision-making, and continuous communication to ensure safe navigation at all times.

3.1.9 Challenge, Enquiry, and Response

The Master must **create an environment** where Bridge Team members feel **confident to ask questions** and challenge decisions when necessary. Encouraging constructive **enquiry and response** strengthens decision-making and enhances navigation safety.

Challenging the **Master or Pilot** when in doubt should **not be seen as undermining authority**. Instead, it should be considered a **necessary safety measure** to prevent errors and reinforce situational awareness.

3.1.9.1 Encouraging Open Communication

The Master must ensure that all Bridge Team members:

- **Clarify** the actions of other team members to understand the **decision-making process**.
- **Practice thinking aloud** by verbally expressing their actions and intentions.

3.1.9.2 Benefits of an Open Challenge Culture

- Improves **situational awareness** by promoting shared understanding.
- Encourages **collaboration** and proactive safety measures.
- Reduces the risk of **human error** through **cross-checking and verification**.
- Builds **confidence** among junior officers and lookout personnel.

By fostering a **culture of constructive questioning**, the Bridge Team can operate **more effectively** and **respond better to dynamic navigational situations**.

3.1.10 Management of stress and distractions

3.1.10 MANAGEMENT OF STRESS AND DISTRACTIONS

⚠ **STRESS AFFECTS PERFORMANCE!**

🔷 Stress levels **increase or decrease effectiveness** on the bridge.
🔷 Each person reacts differently—**be aware of your team**.
🔷 **Tasks should be reassigned** if stress affects performance.

🛑 **SIGNS OF STRESS**
✅ Difficulty in thinking
✅ Inattention or slow reactions
✅ Skipping procedures or procedural violations
✅ Muscle aches, chills, or pale complexion
✅ Dull or bloodshot eyes

🚨 **DISTRACTIONS LEAD TO ERRORS**
⚠️ Distractions indicate a **loss of situational awareness**.
⚠️ Causes: **Stress, fatigue, emergency conditions, excessive workload.**
⚠️ Ignoring distractions **increases the risk of mistakes**.
🔷 **HOW TO MAINTAIN A SAFE BRIDGE** 🔷
✔️ **Encourage information sharing** – No observation is irrelevant.
✔️ **Plan tasks in advance** – Avoid last-minute confusion.
✔️ **Share the workload** – No team member should work in isolation.
✔️ **Use sound judgment and experience** – Keep decision-making structured.
✔️ **Call for assistance when in doubt** – Never hesitate to seek help.
✔️ **Maintain situational awareness** – Stay alert and communicate effectively.

❌ **AVOID BRIDGE DISTRACTIONS**
🚫 **Limit bridge access** to operational personnel.
🚫 **Control mobile phone and device usage.**
🚫 **Restrict communications** to navigation and safety matters.
🚫 **No unnecessary activities** – Keep the bridge focused.

🔵 **A SAFE BRIDGE IS A FOCUSED BRIDGE** 🔵
✅ Stay alert.
✅ Communicate effectively.
✅ Keep distractions away.

Unrestricted bridge access is limited to personnel with direct **operational responsibilities**.

3.1.11 Bridge Team and Internal Communication

Effective communication is essential for safe navigation and efficient bridge operations. Communication must be clear, concise, and understood by all personnel.

The Bridge Team, including the Master, officers, lookout, helmsman, Pilot, and engine room personnel, must use structured communication methods to ensure effective coordination.

To enhance communication:

- Use **closed-loop communication** to confirm received instructions.
- Encourage questioning and verification of information across all ranks.
- Conduct regular **briefings and debriefings** to ensure clarity.

Non-verbal cues, such as **hand signals for helm direction**, can supplement verbal communication to reduce misunderstandings.

Key elements of proper communication include:

- Clarity
- Accuracy
- Brevity
- Standard protocol
- Use of a single working language
- Active listening skills
- Constructive feedback

Barriers to effective communication include noise, crew workload, distractions, and poorly placed equipment.

The Bridge Team must ensure continuous communication with the engine room and other operating areas.

Regular updates should be exchanged regarding:

- Machinery and propulsion status, including any defects.
- Fuel changeover procedures and scheduled maintenance.
- Planned or anticipated speed adjustments.
- Compliance with environmental regulations.

A well-briefed Bridge Team enhances overall ship operations, particularly in emergencies, where a **coordinated response is critical to ship safety**.

3.1.12 New Personnel and Familiarization

All newly assigned personnel must undergo a structured familiarization process. This should be conducted on a one-on-one basis and supported by checklists, manuals, and training resources.

Self-teaching methods, including videos and computer-based training (CBT), can be used as supplementary learning tools but should not replace hands-on familiarization with onboard equipment and procedures.

The Master must ensure that all newly joined crew members:

- Understand navigational procedures.
- Are familiar with emergency response protocols.
- Have a working knowledge of bridge equipment.

A properly trained crew ensures **a safer and more efficient bridge operation**.

3.1.13 Use of English

English is the internationally accepted language of shipping and must be used for all **bridge communications**, including communication with ratings.

The **STCW Code** requires the OOW to have a sufficient understanding of written and spoken English to:

- Read and interpret **nautical charts and publications**.
- Understand **meteorological reports** and messages related to ship safety.
- Communicate effectively with **other ships and shore stations**.

During emergencies, **IMO Standard Marine Communication Phrases (SMCP)** must be used, especially for external communication.

When a Pilot is on board, all communication with other ships, pilot boats, tugs, and **Vessel Traffic Services (VTS)** must be relayed to the Master and Bridge Team in **English**.

The working language of the bridge - ENGLISH - must be recorded in the ship's official logbook.

3.1.14 Standard Protocol for VHF Radio Use

All Deck Officers must adhere to **IMO-recommended phraseology** for maritime communication to ensure clarity and avoid misinterpretation.

Common VHF communication phrases include:

- "This is [Ship Name] calling [Station Name] on Channel [Number]."
- "Over" – Waiting for a response.
- "Say again" – Repeat the last message.
- "Stand by" – Temporary pause in communication.
- "Affirmative" – Yes.
- "Negative" – No.
- "My position is [Latitude, Longitude]."
- "My speed is [Speed] knots."
- "I am altering my course to port/starboard."
- "I require immediate assistance."
- "Mayday, Mayday, Mayday" – Distress call.
- "Pan-Pan" – Urgency message.
- "Securité" – Safety announcement.

Using **standardized communication protocols** ensures **effective ship-to-ship and ship-to-shore coordination**.

3.1.15 Standard Orders to the Helm

Clear and standardized helm commands prevent miscommunication between the OOW and the helmsman.

Standard Helm Orders and Their Meanings:

Order	Action Required
Midships	Rudder held in the fore-and-aft position.
Port/Stbd five, ten, twenty	Rudder turned and held at the specified angle (5°, 10°, or 20°).
Hard Port/Starboard	Rudder turned fully to the port or starboard.
Ease to five, ten, twenty	Reduce the rudder angle to the specified position and hold.

Order	Action Required
Steady	Maintain the vessel's heading using counter rudder.
Steady as she goes	Maintain the ship's current heading.
Nothing to port of [XXX]	Keep the vessel at or to the starboard side of the given course.

3.1.15.1 Helm Order Execution Process

1. The OOW issues the command clearly.
2. The helmsman repeats the command verbatim.
3. The helmsman executes the order and maintains the given heading.
4. The helmsman announces when the ship is steady.
5. The OOW acknowledges with **"Very well."**

Example of Helm Order Execution:

- OOW: **"Port ten."**
- Helmsman: **"Port ten, aye."**
- (Executes command, holding rudder at 10° port.)
- Helmsman: **"Port ten on."**
- OOW: **"Very well."**

3.2 Passage Planning

Passage planning is essential for ensuring the safe and efficient navigation of the vessel from berth to berth. A well-developed passage plan provides a structured approach to navigation and minimizes risks throughout the voyage.

The primary objectives of a passage plan are to:

- Identify hazards and assess associated risks and decision points.
- Ensure sufficient sea room and adequate depth of water.
- Include appropriate position-fixing opportunities for navigation accuracy.
- Comply with reporting requirements and routing measures for ships.
- Consider anticipated traffic and weather conditions.
- Adhere to all environmental protection measures and regulations.

A passage plan is mandatory and serves as a tool for pre-planning and monitoring the vessel's route. It also acts as a means of sharing navigational information with all members of the Bridge Team, including the Pilot. The plan incorporates procedures and checks to prevent "one-person errors", ensuring that decisions are cross-verified.

Passage planning must cover the entire voyage from berth to berth. The arrival port passage plan should be completed before arrival, when final details such as berthing schedules and anchorage times are confirmed.

The **four key stages** of a **safe passage plan** are:

1. **Appraisal** – Gathering and assessing all relevant navigational information.
2. **Planning** – Developing a detailed voyage route and establishing navigational procedures.
3. **Execution** – Carrying out the plan while considering real-time adjustments.
4. **Monitoring** – Continuously checking the vessel's progress and making course corrections as necessary.

The **primary responsibility** for passage planning lies with the **Officer responsible for navigation**, typically the **Second Officer**, under the guidance of the **Master**. The **Master must review and approve the passage plan** before departure and conduct a **pre-departure voyage briefing** with the Bridge Team.
While a comprehensive passage plan should be prepared **before departure**, certain details—such as final berthing arrangements—may not always be available. These details should be finalized **as soon as possible**, and the **Bridge Team should be fully briefed** on the completed plan at the appropriate time.

3.2.1 Appraisal

The passage appraisal process involves gathering relevant information about the proposed voyage. This information is essential for identifying risks, ensuring compliance with regulations, and optimizing navigation safety.
The information obtained is used to:

- Assess the safety and risks of the passage.
- Prepare the passage plan.
- Comply with international, national, and commercial requirements.
- Ensure sufficient bunker, stores, and provisions for the voyage.

3.2.1.1 Navigational Appraisal

To plan the safest and most effective route, the navigational officer must consult multiple information sources, including but not limited to:

- Routing charts, ENC, and current atlases.
- Availability and adequacy of charts and reliability of hydrographic data.
- Anchoring and contingency options.
- Current directions, rate, and set.
- Expected weather conditions, including fog and storm avoidance.
- Recommended routes.
- Route selection and waypoints.
- Tides – times, heights, direction, and rates of set.
- Draft and air draft restrictions, including squat and heel effects (See Under Keel Clearance and Air Draft Sections).
- Sailing Directions and recommended navigational advice.
- Availability and reliability of navigational aids:
    - Light characteristics, rising range, and visibility.
    - Landmarks, radar conspicuous features, and visual ranges.
    - Position fixing methods (radio navigation aids, visual fixes).
- Sea room and traffic density.
- Traffic separation schemes and routing regulations.
- Climate and meteorological data.
- Vessel limitations (draft, air draft, speed, maneuvering characteristics, defects).
- Bridge watch organization (identifying areas where additional manpower is required).
- Communication systems (MSI, GMDSS, VHF channels, and vessel traffic contact frequencies).

- Pilotage requirements.
- Areas of political unrest or piracy concerns.
- Reliability of propulsion and steering systems.

3.2.1.2 Official Charts

Official charts must be available for the entire voyage from berth to berth, including allowances for diversion and weather avoidance.

Charts used for passage planning must be:

- Corrected up to the latest Notices to Mariners, including Temporary (T) and Preliminary (P) Notices.
- Updated with the latest radio navigational warnings (Navtex, EGC, etc.).

Both paper and ENC charts must be corrected as a priority before the voyage. Other charts and publications should be corrected as per standard procedures.

When using ENC, RNC, or paper charts, the following must be considered:

- ENC and paper charts are typically based on the same hydrographic survey data.
- ENC is not necessarily more accurate than a corresponding RNC or paper chart.
- The precision of charted objects may vary, with paper charts offering approximately 0.3 mm accuracy (equivalent to 15 meters or more at scales of 1:50,000 or smaller).
- When planning on ECDIS, ensure that a sufficient safety margin is maintained between charted hazards and the ship's intended route.

3.2.1.3 Official Nautical Publications and Additional Information

Passage planning should also incorporate information from additional nautical publications, including:

- Sailing Directions.
- Tide Tables.
- Notices to Mariners.
- List of Lights and Fog Signals.
- Radio Navigational Warnings.
- Maritime Safety Information (MSI).

3.2.1.4 General and Operational Preparation

The Master, with the assistance of onboard officers, must gather all relevant operational information that could affect the voyage. This includes:

- Berth requirements.
- Bridge manning.
- Bunker calculations.
- Cargo considerations and reporting.
- Commercial and chartering requirements.
- Helicopter operations.
- Mooring and tug arrangements.
- Port entry requirements.
- Security, insurance, and anti-piracy measures.

- Areas of political unrest.
- Strength and stability considerations.

3.2.1.5 Environmental Preparation

The navigational officer and Master must ensure compliance with environmental regulations applicable to the voyage. This includes gathering information on:

- Emission Control Areas (ECA).
- MARPOL Special Areas.
- Particularly Sensitive Sea Areas (PSSA).
- Ballast Water Management.
- Port reception facilities.
- Other national or regional requirements.

3.2.1.6 Emission Control Areas (ECA)

Emission Control Areas (ECAs) are designated under **MARPOL Annex VI** to regulate ship emissions of NOx, SOx, and particulate matter (PM) to mitigate air pollution and protect public health and the environment.

3.2.1.7 MARPOL Special Areas

Special Areas are designated under MARPOL to regulate operational discharges of oil and other substances in enclosed or semi-enclosed seas. Criteria for designation include:

- Oceanographic conditions.
- Ecological sensitivity.
- Vessel traffic characteristics.

Special Areas under MARPOL include restrictions under Annex I (oil), Annex II (noxious liquid substances), Annex IV (sewage), and Annex V (garbage).

3.2.1.8 Particularly Sensitive Sea Areas (PSSA)

PSSAs are designated areas requiring special protective measures due to their ecological, social, cultural, economic, scientific, or educational significance.

Protective measures in PSSAs may include:

- Ship routing schemes.
- Ship reporting requirements.
- Areas to be avoided.
- Anchorage prohibitions.
- Traffic separation schemes.
- Pilotage recommendations.

Notable PSSAs include:

- The Great Barrier Reef, Australia.
- The Wadden Sea, Denmark, Germany, Netherlands.
- The Baltic Sea Area.
- The Galapagos Archipelago, Ecuador.

3.2.1.9 Ballast Water Management

Ballast water management procedures must be followed as per the ship-specific **Ballast Water Management Plan (BWMP)** and classification society requirements.

3.2.2 Planning

Having completed the **appraisal stage**, the **navigational officer**, usually the **Second Officer**, must create a **detailed passage plan** covering the entire voyage from **berth to berth**, including all waters where a **Pilot will be onboard**.

The passage plan must be plotted using **appropriate charts (ENC or paper charts)**, marking all hazards, ensuring safe margins, and incorporating all **necessary navigational elements**.

3.2.2.1 Route Planning and Plotting

The passage plan should be **plotted on the largest scale charts available**, ensuring:

- Hazards are **clearly marked**, and safe distances are maintained.
- **Cross-track limits (XTD)** are defined for each leg and marked on **ECDIS**.
- The **planned track is clearly plotted**, ensuring adequate safety margins.
- Advance warnings of **navigational hazards** are considered when transitioning between charts.
- Preference is given to a **safer, longer route** rather than a **shorter, high-risk route**.

The plotted route must include:

- **True course** in **360-degree notation** on all charts.
- **Transit marks, clearing bearings, or clearing ranges** to aid navigation.

3.2.2.2 Key Passage Planning Elements

The passage plan must include **critical navigational elements**, such as:

- **Safe Speed**: Considering ship **maneuvering characteristics** and surrounding risks.
- **Draft Restrictions**: Ensuring **sufficient under-keel clearance (UKC)** while accounting for **squat and heel effects** in turns.
- **Speed Adjustments**: Planning speed changes to meet **ETA requirements**, **tidal restrictions**, and **night passage limitations**.
- **Machinery Status**: Identifying positions where **engine settings need modification**.
- **Course Alteration Points**: Marking **wheel-over positions**, considering ship's **turning radius, tide, and current effects**.
- **Minimum Under-Keel Clearance (UKC)**: Defined for **critical areas**.
- **Air Draft Clearance**: Where necessary, ensuring safe passage under bridges and overhead obstructions.
- **Critical Position Fixing**: Specifying **primary and secondary fixing methods** at key positions.
- **Contingency Arrangements**: Pre-planning for **emergency routes, alternate anchorages, and abort points**.
- **Abort Points & Points of No Return**: Defining when a vessel must either **proceed ahead or abort**.

3.2.2.3 Abort Point and Point of No Return

- **Abort Point**: A defined position **beyond which there is insufficient sea room** for the vessel to safely turn around and return.
- **Marked in the passage plan and charts** when approaching **ports, canals, or congested areas**.
- **Turning characteristics** must be factored in to determine if an abort is practical.
- **The abort point is a navigational aid**, not an absolute rule. The **Bridge Team must assess conditions in real-time** before making decisions.

The **route must be plotted on the vessel's primary navigation system**. When paper charts are used as a backup, the track should first be **plotted on an ENC** and then transferred to paper.

3.2.2.4 ECDIS Planning

ECDIS enhances the **efficiency and accuracy of passage planning**. The following must be considered:

- **Availability of Updated ENC and RNC Charts**: Identifying areas where **Raster Chart Display System (RCDS) mode** may be required.
- **Rechecking of Previously Used Routes**: Ensuring they remain valid and safe.
- **Limitations of ENCs**: Understanding that **ENC precision** is not necessarily greater than paper charts.
- **Selecting Individual Chart Symbols**: Using **"pick reports"** to obtain detailed safety information.
- **Avoiding Information Overload**: Managing display settings to prevent clutter.
- **Positioning Accuracy**: Always **cross-check GPS fixes** using traditional navigation methods.
- **Offset and Look-Ahead Display**: Utilizing these features to enhance situational awareness.
- **True and Relative Vectors**: Understanding their correct interpretation.
- **Software Anomalies**: Being aware of ECDIS-related software errors and mitigating risks accordingly.
- **Time Settings**: Considering UTC vs. **local time differences**.
- **Loading the Correct Passage Plan**: Ensuring the **primary and backup ECDIS terminals** have the approved route.
- **Setting Safety Parameters**: Configuring **safety depth and safety contours** based on the ship's draft.
- **Ensuring Correct Sensor Inputs**: Checking **GPS, gyro compass, and speed log connections**.
- **Verifying Vessel Characteristics**: Confirming **draught, squat, turn radius, and dimensions**.
- **Saving, Backing Up, and Locking the Passage Plan**: Preventing unauthorized changes.

3.2.2.5 Category of Zone of Confidence (CATZOC)

During planning, the navigational officer must assess the **positional accuracy (POSACC) and sounding accuracy (SOUACC) of survey data**. **Caution must be exercised** to ensure adequate safety margins.

CATZOC Category	Position Accuracy (POSACC)	Depth Accuracy (SOUACC)
A1	±5m + 5% of depth	0.50m + 1% of depth
A2	±20m	1.0m + 2% of depth
B	±50m	1.0m + 2% of depth
C	±500m	2.0m + 5% of depth
D	Worse than C	Worse than C

CATZOC Category	Position Accuracy (POSACC)	Depth Accuracy (SOUACC)
U	Unassessed	Unassessed

If using **ZOC-D or ZOC-U** data, **Checklist VO-63 (Transit Navigation in ENC with ZOC-U/ZOC-D)** must be completed along with a **risk assessment**.

3.2.2.6 Safety Parameters in ECDIS

The navigational officer must ensure **correct ECDIS safety settings** are included in the passage plan. These parameters must be **adjusted for each leg** and approved by the Master.

3.2.2.6.1 Safety Contour and Safety Depth

- Calculated **for each leg** and set in ECDIS as per the ship's draft.
- **Manual no-go areas** should be marked where ENC depth contours are insufficient.
- If a safety contour crossing is necessary, the following must be done:
  - Review the **display with "all" viewing groups** to identify safe areas.
  - Add **manual contours** and mark potential hazards.
  - Perform a **route check** and document findings in the passage plan.
  - Obtain **Master's approval** before proceeding.

3.2.2.6.2 Cross Track Distance (XTD)

- **Planned for each leg** based on:
  - Available navigational space.
  - Maneuvering considerations in hazardous areas.
  - Anticipated traffic conditions.

3.2.2.6.3 Guard Zone

- Refer to **ship-specific ECDIS manual** for details on guard zone settings.

3.2.2.7 Cross-Ocean Planning

For **ocean passages**, additional considerations include:

- **Ocean routing charts** for currents, wind patterns, and ice limits.
- **Load line charts** for compliance with IMO regulations.
- **Gnomonic projection charts** for great circle routing.

Factors influencing route selection:

- **Ocean currents and their impact on speed**.
- **Seasonal weather variations**.
- **Environmental protection zones**.
- **Piracy avoidance measures**.

3.2.2.8 Coastal and Open Sea Planning

In **coastal waters**, increased caution is necessary due to:

- **Shallower waters and tidal influences**.
- **Higher traffic density**.
- **Proximity to land and infrastructure**.

- **Navigational aids and visual fixing opportunities**.
- **VTS, reporting schemes, and pilotage requirements**.

3.2.2.9 Pilotage Waters Planning

Pilotage waters require **detailed planning** due to:

- Increased navigational hazards and local regulations.
- Pilot boarding points and means of embarkation.
- Reporting and communication requirements.
- Local conditions, rules, and restrictions.
- Details of the berth or anchorage.

3.2.2.10 Voyage Planning Standard Format and Approval

Voyage planning must comply with **IMO STCW Code** and the **ICS Bridge Procedures Guide** to ensure **safe, efficient, and environmentally responsible navigation**.

- The **Second Officer**, as the officer responsible for navigation, prepares the **passage plan**.
- The **Master must review and approve** the passage plan before departure.
- If the **port of destination is unknown**, the passage plan must cover **at least 72 hours** of the intended voyage before departure.

3.2.6.1 Pre-Departure Briefing

The Master must conduct a **pre-departure and voyage briefing** for:

- **All navigating officers**
- **The Chief Engineer**

The briefing must cover:

- **Environmental considerations**, including:
  - Local by-laws
  - Meteorological conditions
  - Restricted areas
  - Oil fields, coral reefs, marine wildlife, flora, and fauna
- **Navigational risks**, including charted hazards and traffic management.
- **Chart and publication corrections**, verified by other deck officers.

The passage plan must be **signed by all OOWs and the Chief Engineer** to confirm their **acknowledgment and understanding**.

Throughout the voyage, **OOWs must monitor** and update navigational warnings as required, keeping the entire **Bridge Team Management (BTM) informed**.

3.2.6.2 Pre-Arrival Meeting

Before arrival, the Master must hold a **pre-arrival meeting** with:

- **All OOWs**
- **The Chief Engineer**

Topics to discuss:

- **Pre-planned arrival procedures**

- **Risk Assessment (RA) for berthing and mooring operations**, including:
  - Use of pilot boats
  - Tugboat assistance
  - Mooring arrangements
- **Environmental aspects** of arrival, such as:
  - Funnel smoke emissions
  - Greywater discharge
  - Garbage disposal
  - Cargo vapor emissions
  - Air quality compliance
  - Ballast water management
  - Pollution prevention

The **Risk Assessment (RA) must be attached to the final passage plan**.
If the vessel is arriving at a **new or unfamiliar port**, the Master must contact the **ASM office** for additional safety-related information, including:

- **Draft and water depth details**
- **Availability of tugs and mooring boats**
- **Berthing facilities and restrictions**
- **Any security concerns**

3.2.6.3 Post-Voyage Review

After completing the voyage, the Master, **Bridge Team**, and Chief Engineer should:

- Conduct a **post-voyage meeting** to review execution of the plan.
- Identify **challenges or areas for improvement**.
- Ensure that lessons learned **are applied to future voyages**.

The findings from the **review meeting must be documented** for **continuous improvement**.

3.2.2.11 Information for Voyage Planning

Voyage planning requires the collection of **general and navigational information** to ensure **safe transit**.

3.2.2.11.1 General Information

- **Intended Speed**: As per **charter-party** or **charterer's instructions**.
- **Acknowledgment**: All OOWs and the Chief Engineer must **study and sign** the passage plan before departure.
- **Port of Departure**: Clearly defined in the plan.
- **Draft on Departure**: Must be confirmed **before leaving port**.
- **Port of Destination**:
  - If known, enter all **general details**.
  - If unknown, complete details later when **ETA is confirmed**.
- **General Waypoint Information**: Position-fixing references for key navigation points.
- **Charts and Publications**:
  - Must be **updated and corrected** before departure.

- **Additional waypoints** should be inserted when necessary.

3.2.2.11.2 Navigational Information Between Waypoints

- Navigation data between waypoints must be **clearly recorded** when significant risks exist.
- If the voyage involves **ocean passages or great circle routes**, fewer pages may be required.
- Additional loose pages may be inserted **if necessary**.

3.2.2.12 Parallel Indexing

- **Parallel indexing** must be used **whenever possible** to:
  - Keep the vessel **on its intended track**.
  - Monitor **accurate course alterations**.
- The OOW must compare the **actual track** against the planned track to improve navigational awareness.

3.2.2.13 Ships' Routing Measures

Ship routing measures are designed to:

- **Reduce collision risk** in high-traffic areas.
- **Minimize grounding hazards**.
- **Protect environmentally sensitive sea areas**.

The vessel must adhere to all **IMO-designated traffic separation schemes and routing measures**.

3.2.3 Monitoring

The **close and continuous monitoring** of the vessel's progress along the pre-planned track is **critical for safe navigation**. The **OOW** must always be aware of the ship's position concerning the passage plan and ensure that it remains **within the authorized cross-track distance (XTD)**.

If the **OOW has any doubt** regarding the ship's position, they must:

1. **Immediately call the Master**.
2. **Take necessary actions** to ensure the safety of the vessel.

The **navigational equipment performance** should be checked:

- **Before departure**.
- **Before entering restricted or hazardous waters**.
- **At regular intervals during the passage**.

All available **navigational equipment must be utilized effectively**, considering the following:

3.2.3.1 Position Fixing and Monitoring Techniques

3.2.3.1.1 Visual Fixing

- **Visual bearings** are typically **the most accurate** means of fixing a position.
- Every fix should, if possible, be based on **at least three position lines**.
- **Transit marks, clearing ranges, and bearings** must be utilized whenever possible.
- When verifying a fix, use **different data sources** for cross-checking.

3.2.3.1.2 GPS Position Cross-Checking

- **GPS positions must be cross-checked** against **visual** or **radar-based fixes**, especially when navigating near **landmarks or coasts**.
- During **ocean passages**, OOWs should:
  - Compare **multiple GPS sources**.
  - Use **dead reckoning (DR) calculations** for position validation.

3.2.3.1.3 Echo Sounder as a Navigation Aid

- The **echo sounder** must be operated **following UKC policy** and used as a **cross-reference for actual under-keel clearance**.
- Example: If **ECDIS shows the vessel crossing a 100m contour**, the echo sounder should confirm this depth.
- If available, an **echo sounder alarm** should be set at the **safest under-keel clearance** expected for the voyage segment.

3.2.3.1.4 Use of Buoys

- **Buoys should not be relied upon** for fixing positions.
- They may be used as guidance **when shore marks are difficult to distinguish visually**.

3.2.3.2 Navigational Equipment and Instruments

3.2.3.2.1 Instrument Functionality

- The **OOW must ensure** that all navigational instruments are **functioning correctly** and displaying **accurate readings**.
- The **fixing frequency** must align with **navigation area requirements and conditions**.

3.2.3.2.2 Radar Position Monitoring

- Radar can be used for position monitoring **via parallel indexing**.
- **Parallel Indexing (PI) is compulsory** in **coastal navigation** and must be included in the passage plan.
- If floating objects are used for PI, their **positions must be verified**.

Radar Information Overlay

- Radar overlay may be used by the **OOW**, but only on **one radar unit at a time**.
- The **other radar must remain in standard mode** to ensure that critical information is not missed.
- The use of **radar overlay must be recorded in the deck log book**.

3.2.3.3 ECDIS as a Monitoring Tool

On vessels equipped with **ECDIS**, the system must be used for monitoring the ship's position along the **intended route**.

- **OOW must be fully familiar** with the ECDIS **Operations Manual**.
- **ECDIS must be continuously monitored** to confirm that the vessel follows the planned track.
- **Safety depth and safety contour settings must align** with the passage plan.

3.2.3.4 Monitoring Maritime Safety Information (MSI)

The **bridge team must monitor** all sources of **Maritime Safety Information (MSI)**, including:

- **NAVTEX**
- **EGC (Enhanced Group Call)**
- **Other radio navigational warnings and weather broadcasts**

When a **navigational warning is received** that affects the vessel's route:

- **The OOW must sign or digitally verify the message**.
- The **warning must be plotted on the chart**.
- If the warning poses an **immediate navigational risk**, the **Master must be informed immediately**.

3.2.3.5 AIS Aids to Navigation (AIS AtoN)

- Some **symbols appearing on ENC charts** may originate from **AIS transmissions** rather than being **pre-encoded on the chart**.
- The **Navigational Officer must be aware** of these AIS-based objects and ensure they are correctly interpreted.

3.2.4 Amending the Passage Plan

The **OOW must execute** the passage plan **as approved by the Master**. However, certain situations may arise that require **amendments or deviations**.

Any **deviation from the agreed passage plan** may introduce **new risks** that require assessment and mitigation.

Crossing the XTD limit (as approved by the Master) is considered a **deviation** from the passage plan.

If a passage plan must be **permanently amended**, the relevant sections of the **appraisal and planning process** should be repeated.

- The **Master must be informed** and must **approve the amendment**.
- The **Bridge Team must be briefed** on any modifications.

3.2.4.1 Situations Requiring a Revised Passage Plan

The following circumstances may require **modification** of the passage plan:

- **Weather routing developments** that affect the planned track.
- **Change of ship's orders** or destination port.
- **Search and Rescue (SAR) operations**, requiring the vessel to divert.

3.2.4.2 Circumstances Requiring Temporary Deviation

The vessel may need to **temporarily deviate** from the planned course or speed to ensure safe navigation. This can be due to:

- **Unexpected weather variations** affecting the planned route.
- **Instructions from Vessel Traffic Services (VTS)** requiring course alterations.
- **Navigational warnings**, such as new obstructions, drifting hazards, or newly reported wrecks.
- **Detection of uncharted hazards**, requiring a safer route.

Any deviation must be **temporary**, and the vessel should return to the **planned route** as soon as it is **safe to do so**.

3.2.4.3 Bridge Team Approval and Documentation

If a passage plan is amended **during the voyage** due to unforeseen circumstances, the **Bridge Team must:**

- **Review the revised plan together.**
- **Acknowledge and sign the revised passage plan**, confirming their agreement with the changes.

This ensures that all officers remain aware of the **updated navigation strategy** and can respond effectively.

3.2.5 Sailing Instructions and Nautical Charts

3.2.5.1 Sailing Instructions

Before every voyage, the Master receives **sailing instructions** from the party operating the vessel.

- If no sailing instructions are provided or there is **uncertainty**, the Master must **immediately contact the Office** for clarification.
- The Master must **review** the instructions and inform the **Chief Engineer and Chief Officer** of the key points.
- If there is **any contradiction** between the instructions and the vessel's contractual obligations, the Master must:
  - **Notify the Office before departure**.
  - **Not delay the vessel** due to these contradictions.

3.2.5.2 Books, Publications, and Nautical Charts

3.2.5.2.1 Responsibility for Navigational Publications

- The **Master** is responsible for managing and updating the **navigational library**.
- This responsibility may be **delegated** to the **Navigation Officer (Second Officer)**, but the Master retains **ultimate responsibility**.
- All navigational publications must comply with the **latest list provided by the office** and be maintained as per **outfit management regulations**.

3.2.5.2.2 Permitted and Restricted Chart Types

Only **official navigational charts and publications** issued by **government-authorized hydrographic offices** are permitted onboard.

🚫 **The following chart types are NOT to be used:**

- **Raster Navigational Charts (RNCs)**
- **Commercial charts (e.g., TX-97, CM-93/3)**

3.2.5.2.3 Chart and Publication Management

The Master must **ensure the vessel carries all necessary navigational charts and publications**, which must be:

✅ **Up-to-date and corrected** as per the latest **Notices to Mariners (NTM)**.

✅ **Checked before every departure** to confirm accuracy.

✅ **Verified by the navigation officer and the Master**.

If any publications or charts are **missing**:

- They should be **purchased locally** or **acquired from another vessel**.
- If time allows, a request must be sent to the Office for **requisition**.

An **updated inventory** of all charts and publications must be **maintained for easy reference**.

3.2.5.2.4 Chart Corrections and Updates

- The **Second Officer** is responsible for updating charts and publications.
- Chart corrections must follow the guidance in **The Mariner's Handbook (NP100)** and **How to Keep Your Admiralty Products Up-to-Date (NP294)**.
- A **log of all corrections** must be maintained and checked against the **Admiralty Notices to Mariners (NP234)** every six months.
- **ENCs (Electronic Navigational Charts)** must be updated weekly and verified by the Master.
- Expired **ENC licenses** must be removed from the ECDIS database.

🔷 **Temporary and Preliminary Notices (T&P Notices):**

- Some ENC providers (e.g., UKHO) **incorporate T&P notices into updates**, while others do not.
- The **Navigation Officer must verify** if T&P corrections have been applied.
- Vessels without **Admiralty Information Overlay (AIO)** must manually incorporate T&P notices in ECDIS.

3.2.5.2.5 Category of Zone of Confidence (CATZOC)

The **Officer of the Watch (OOW)** must check the **accuracy of survey data** in ENC charts using **CATZOC classifications**:

CATZOC	Position Accuracy	Depth Accuracy
A1	±5m + 5% of depth	±0.5m + 1% of depth
A2	±20m	±1.0m + 2% of depth
B	±50m	±1.0m + 2% of depth
C	±500m	±2.0m + 5% of depth
D	Worse than C	Worse than C
U	Unassessed	Unassessed

For areas with **CATZOC U or D**, a **Risk Assessment (RA) must be conducted**, and **Checklist VO-63 (Transit Navigation in ENC with ZOC-U/ZOC-D)** must be completed.

3.2.5.2.6 Managing Old Charts and Publications

- **Old and uncorrected charts must be destroyed** or disposed of immediately upon receipt of updated versions.
- The vessel's **chart management system must be updated regularly** to reflect all new folios and updates.

📌 **Important Rules for Chart Management:**

1. **The Master must ensure that the Second Officer is fully familiar** with chart management procedures.
2. **Training must be arranged if necessary** to ensure competency.
3. **ECDIS should never be updated while navigating in confined or congested waters**.

4. **All unresolved update errors must be reported to the Master**, especially those affecting the current voyage.

3.2.5.2.7 Use of Digital Admiralty Publications

All vessels must use **digital Admiralty publications**, including:

✅ **e-NPs (Electronic Nautical Publications)**
✅ **ADRS (Admiralty Digital Radio Signals)**
✅ **ADLL (Admiralty Digital List of Lights)**
✅ **Total Tide**

🔷 **Vessels still using paper charts/publications** must transition to digital formats **once new editions are released**.

🔷 **All digital publications must be installed on two independent computers**, both **licensed and updated weekly**.

Vessels using **Reg4Ships services** should continue using them, and other vessels may be considered based on **cost and feedback**.

3.2.5.2.8 Ordering Charts and Publications

- Masters must **place requisitions for new charts/publications** based on anticipated voyages.
- Requests should be **sent to the service provider** as soon as new voyage details are available.

⚠ **If required charts or publications cannot be obtained** due to an **unexpected change in voyage plan**:

- The **Master must conduct a written risk assessment**.
- The Office must be **immediately informed** to evaluate the situation.

3.2.5.2.9 Use of ECDIS as the Primary Navigation System

For vessels equipped with **ECDIS**, it is the **primary means of navigation**.

🚫 **ECDIS should not be changed unless**:

1. **There are no approved ENC charts available**.
2. **The system malfunctions**, and a **Risk Assessment is conducted**.
3. **Approval from the company is obtained**.

📌 **Key Rules:**

- Old and new charts/publications **must not be kept together**, to **avoid confusion**.
- Before departure, all **charts and publications must be updated and cross-checked by deck officers**.
- The Master must send a **confirmation message to the Office**, stating that:
  - ✅ **All navigational equipment is operational**.
  - ✅ **All charts and publications are available and corrected**.

🚨 **The Master has the authority to refuse departure** if the vessel does not have the **necessary charts and publications** for the intended voyage.

3.2.6 Comprehensive Berth to Berth Passage Plan

3.2.6.1 Overview

A **comprehensive passage plan** must be prepared for **the entire voyage**, covering **ocean, coastal, and pilotage waters**. The **Master must ensure** that the passage is planned using **appropriate charts and publications** before proceeding to sea.

- The **Navigating Officer (usually the 2nd Officer)** is responsible for completing the passage plan.
- The **Master must verify and approve** the plan before departure.
- The passage plan must be **comprehensive, easy to interpret, and detailed**.

3.2.6.2 Official Guidelines for Passage Planning

Passage planning should align with the **official publications and guidance**, including:

📌 **NP 231** – Admiralty Guide to the Practical Use of ENCs

📌 **NP 232** – Admiralty Guide to ECDIS Implementation, Policy, and Procedures

3.2.6.3 Passage Plan Documentation

The passage plan must be **recorded on each applicable chart** and can be supported by a **conning notebook** or equivalent.

🚨 **Important Rules:**

✅ Avoid **excessive information** in navigational areas of the chart.

✅ **Important notes should be recorded away from the track** and referenced properly.

✅ Avoid **highlighting or marking over chart details** with **felt-tip pens, red pencils, or ink**.

3.2.6.4 Essential Elements of the Passage Plan

The following **must be marked** on the **chart or ECDIS** where it enhances navigation safety:

🔷 **Position Fixing and Navigation Aids**

- Parallel indexing (**not from floating objects unless verified**)
- Chart changes and updates
- Methods and frequency of **position fixing and verification**
- Navigation and **radar marks**
- Landfall targets and **lighthouses**
- Transits, heading marks, and leading lines
- **VTS reporting points**

🔷 **Safety and Hazard Avoidance**

- **No-go areas** (only critical hazards; avoid excessive marking)
- **Clearing bearings and lines**
- **Significant tides and currents**
- **Safe speed guidelines and speed alteration points**
- **High-density traffic areas**
- **Anchor clearance zones**

- **Minimum under keel clearance (UKC)**

🔷 **Operational Considerations**

- **Changes in machinery status**
- **Positions where the echo sounder should be activated**
- **Abort positions** (critical points where the vessel can no longer turn back)
- **Air draft considerations** (for bridges, power lines, cable cars, etc.)

🚨 **For ECDIS Users:**

- Ensure **passage planning details do not obscure chart information**.
- **Backup arrangements must be ready** for **immediate use**, especially in **confined waters**.
- If **ECDIS is the primary means of navigation**, passage plan details must be **accurately programmed** in the system.

3.2.6.5 No-Go Areas and Course Line Marking

- **No-go areas should highlight critical dangers** like **wrecks or shallow water** near the course line.
- **Extensive no-go markings should be avoided** as they may clutter the chart.
- **No-go areas change** with draft, tide, and passage timing, so **permanent markings should be avoided**.
- All **previous voyage course lines** must be erased before new planning.

🚨 **For ECDIS and Paper Chart Users:**

- If the vessel has **one ECDIS and paper charts**, one must be designated as **primary navigation** and the other as **backup**.
- If **ECDIS is the backup**, it must be **loaded with official charts and the passage plan** before the voyage.
- If **paper charts are the backup**, they must be **fully corrected and available for immediate use**.

3.2.7 The Passage Plan Briefing and Debrief of a Voyage

3.2.7.1 Overview

The **Master must conduct a briefing and debriefing** with the **entire bridge team** before and after every voyage.

- **Pre-Voyage Briefing:** Ensures all team members understand the passage plan, responsibilities, and safety considerations.
- **Post-Voyage Debriefing:** Evaluates the execution of the passage, identifies areas for improvement, and documents lessons learned.

3.2.7.2 Pre-Voyage Briefing

🚢 **Objective:** Ensure all **bridge team members** are well-prepared for the voyage.

✅ Conducted by the **Master** before the voyage begins.

✅ Includes **all members of the Bridge Team**.

✅ Covers the **entire passage plan**, including:

- Key navigation points and course alterations.
- Safety parameters, under keel clearance (UKC), and hazards.

- Expected **traffic, weather, and restricted areas**.
- Communication procedures and **VTS reporting points**.
- Emergency procedures and contingency plans.
- Bridge team responsibilities and watch assignments.

📌 **The Chief Engineer must also be present** to discuss any engine-related considerations.

3.2.7.3 Post-Voyage Debriefing

🚢 **Objective:** Analyze the voyage, identify improvements, and document lessons for future passages.

✅ Conducted by the **Master** after voyage completion.

✅ Discussion should be **open and constructive**, allowing all members to provide feedback.

✅ Focuses on:

- **Areas that were not effectively executed or monitored**.
- **Root causes** of any errors or inefficiencies.
- **Actions required** to prevent future occurrences.
- **Aspects that went well**, recognizing good practices.

📌 The debriefing should **result in an action list** to improve future passage plans.

3.3 Prior to Sailing, Watchkeeping, and Collision Avoidance

3.2.8.1 Prior to Sailing

Before departure, the **Master must confirm that the vessel is fully prepared for sea** and that all equipment is operational.

- **Department Heads** must report to the **Master** on the **completion of repairs** and confirm that their respective departments are ready.
- The **Chief Engineer** must ensure that the **Emergency Generator is tested and ready for immediate use**.
- A **pre-sailing checklist (VO 37)** must be completed.
- A thorough inspection must be carried out to detect any **stowaways**.

3.2.8.2 Responsibility

The **Master holds ultimate responsibility** for the **safe navigation of the vessel**, and this **cannot be delegated**. However, the Master may assign specific tasks to the **Chief Officer and Navigation Officer**.

- The **Officer of the Watch (OOW)** must remain on the **bridge at all times** until properly relieved.
- In vessels with a **separate chart room**, the OOW may leave the bridge for a **short period** to conduct essential **navigational duties**, provided that a proper lookout is maintained.
- Even when the Master is present on the bridge, the **OOW remains responsible for navigation** until the Master formally assumes control.
- The Master should **monitor the OOW's actions** instead of taking over control, using this as an opportunity for training.

The OOW is responsible for ensuring that any **work being carried out near radar, radio aerials, or sound signaling equipment** does not interfere with operations. Warning notices should be posted on equipment under maintenance.

3.2.8.3 Distraction Control

- **Mobile phones, MP3 players, and personal electronic devices are prohibited** on the bridge.
- These distractions not only pose a navigational risk but can **affect the quality of Voyage Data Recorder (VDR) recordings**.
- **Internet and email access** on the bridge is strictly limited to:
  - Updates for nautical charts and publications.
  - Weather information.
  - Navigational warnings.
  - Operational information relevant to the passage plan.
- **Unrestricted bridge access is limited** to personnel with direct **operational responsibilities**.

3.2.8.4 Watchkeeping and Maintaining a Good Watch

The Master must ensure that the **Navigational Watch** complies with **STCW Chapter VIII, Part 3 (Watchkeeping at Sea)**.

- The OOW is responsible for **maintaining an alert and continuous watch** to prevent collisions, stranding, and other navigational hazards.
- All watchkeeping personnel must be fully **trained and aware of their duties**.
- The OOW must be alert and **fully aware of their surroundings**, ensuring that all watch crew members remain fit for duty.

Key Watchkeeping Responsibilities:

- **Maintain an all-round visual and aural lookout** to detect ships, landmarks, and navigational hazards.
- **Monitor approaching vessels**, tracking their movement and compliance with COLREGS.
- **Identify ship and shore lights** accurately.
- **Ensure that the course is being steered correctly** and that all helm orders are executed properly.
- **Monitor radar and echo sounder displays**.
- **Observe weather conditions** and take necessary precautions in case of deteriorating visibility.
- **Regularly check navigation lights** and other signaling equipment.
- **Determine gyro and magnetic compass errors** at regular intervals.
- **Monitor all maritime safety information (MSI)**, including weather reports and VHF transmissions.

A change in **Basic Watch Conditions** (e.g., from Level 1 to Level 3) does not automatically transfer the **conn**. The **OOW must retain control** unless an official verbal handover is made.

3.2.8.5 Watchkeeping Roles and Responsibilities

Conning Officer

- Responsible for the **overall coordination of the bridge watch**.
- Ensures that the vessel's **course and speed are adjusted for safe navigation**.

Collision Avoidance Officer

- **Primary duties** involve **radar operation and collision avoidance**.
- Responsibilities include:
  - Ensuring **radar plot accuracy** for speed calculations.

- Conducting **rapid radar plotting and ARPA assessments**.
- Plotting **closing targets** to determine CPA (Closest Point of Approach) and TCPA (Time to CPA).
- Reporting accurate data to the **Conning Officer**.

Navigation Officer

- Responsible for **radar operation with navigational oversight**.
- Duties include:
  - Acknowledging **helm and engine orders** and ensuring proper execution.
  - Monitoring **engine response and speed settings**.
  - **Plotting radar and navigation data** onto the appropriate charts.
  - Maintaining all **bridge logs and records**.

Communication Officer

- Responsible for **bridge radio communications**.
- Logs **all relevant communications**.

3.2.8.6 Collision Avoidance

- **COLREGS must be strictly followed** at all times.
- All vessels must be given a **safe distance** as per international regulations.
- There should be **no hesitation in deviating from the planned track** for collision avoidance, provided the deviation does not create another close-quarters situation.

Key Considerations:

- **Radar and ARPA must be used** to assess collision risks.
- The OOW must understand the limitations of ARPA, including:
  - **Errors in CPA and TCPA calculations** (up to 0.7 NM and 1.0 minute).
  - **Variability in speed and course readings**.
- The OOW must take **early and decisive action** to avoid collisions.

Recommended **Minimum CPA (Closest Point of Approach) Limits**:

Area	CPA Limit	TCPA Limit
Coastal Waters	1.0 NM	10 minutes
Open Seas	2.0 NM	20 minutes

AIS **must not** be used as the primary method to determine collision risk.

3.2.8.7 Safe Speed Considerations

The vessel must always comply with **COLREGS Rule 6 (Safe Speed)**.

- Speed must be adjusted well in advance for **developing navigational situations**.
- **Safety must always take precedence over commercial considerations**.
- All bridge team members must voice concerns if the vessel's speed appears inappropriate.
- Speed adjustments should factor in:
  - **Squat effects**.
  - **Port approaches and bends in rivers**.
  - **Heavy weather conditions**.

3.2.8.8 Monitoring Traffic, Even at Anchor

- The **bridge team must continuously monitor surrounding traffic**.
- **CPA and TCPA alarms should be set appropriately**.
- **Additional bridge manning should be requested** in high-traffic situations.

3.2.8.9 Track Management

- The OOW must maintain a **thorough awareness of whether the vessel is on track**.
- **Parallel indexing and cross-track error (XTD) monitoring** must be used.
- The **chart track is a guideline**, and deviations should be made when necessary for safety.
- Any **course alterations** must be **logged** in the deck logbook.

3.2.8.10 VHF and External Communications

- The bridge team must effectively filter relevant VHF communications.
- When monitoring multiple channels, **correct communication protocols must be used**.
- **VHF should not be used for collision avoidance**, but monitoring communications can aid situational awareness.

3.2.8.11 Navigation, NAVTEX, and Weather Warnings

- The **OOW must ensure that NAVTEX and satellite telex messages are fully operational**.
- Upon receiving **navigational warnings**, the OOW must:
  - Determine if they **apply to the voyage**.
  - Mark them on the **chart or ECDIS**.
  - Notify the **Master if the warning requires immediate action**.

3.4 Operational Status

3.2.9.1 Overview

The **Officer of the Watch (OOW)** must always be aware that the **engines are available** for maneuvering and should not hesitate to use them when necessary. Whenever possible, **timely notice** should be given before altering engine movements.

The **OOW must also be fully familiar with the ship's maneuvering capabilities**, including:

- **Stopping distances** in both emergency and routine conditions.
- **Time required** to achieve a full stop under different operating conditions.

3.2.9.2 Definitions of Navigation Zones

Open Sea:

- No pilotage required.
- Distance to shore greater than **12 nautical miles**.
- Water depth greater than **three times the vessel's draft**.
- Vessel is not following a defined way marked by buoys or **Traffic Separation Schemes (TSS)**.

Restricted/Coastal Waters:

- No pilotage required.
- Distance to shore **less than 12 nautical miles**.
- Water depth **less than three times the vessel's draft**.
- Vessel is not following a **marked route or TSS**.

Confined/Enclosed Waters:

- Pilotage required.
- Distance to shore **less than two times the vessel's full-speed turning diameter**.
- Vessel is following a **marked route or TSS**.

Congested Waters:

- Heavy traffic, **limited sea room for maneuvering**.
- Presence of **navigational hazards and shallow water**.

3.2.9.3 Operational Status of Machinery and Navigational Equipment

Harbor Mode (HM) – When the vessel is safely berthed in normal weather conditions:

- **Bridge:** Radars standby, radio standby, AIS on low power, navigation lights off, flags adjusted, DG light on (if applicable), steering gear pumps off.
- **Engine Room:** If no shore power, at least one auxiliary engine running.

Anchor Mode (AM) – When the vessel is at anchor in normal weather conditions:

- **Bridge:** Radars on, GMDSS watch active, AIS on, navigation lights and flags adjusted, DG light on (if applicable), anchor ball displayed, steering gear pumps off.
- **Engine Room:** If no shore power, at least one auxiliary engine running.

Manoeuver Mode (MM) – When the vessel is navigating in restricted or enclosed waters:

- **Used for:**
  - Pilotage.
  - Transiting **critical navigational areas** such as the **Dover Strait, Malacca Strait, Torres Strait, Prince William Channel, Straits of Hormuz, Gibraltar, Babel Mandeb, Suez/Panama Canal**.
  - Adverse weather conditions while at anchor or berthed.
- **Bridge:** Two radars operational (X-band and S-band), all bridge equipment running.
- **Engine Room:** Two steering pumps, main engine at maneuvering RPM, additional generators running, thrusters and deck machinery engaged.

Sea Mode (SM) – When the vessel is in open sea with free navigation:

- **Bridge:** One radar operational (X-band), all bridge equipment running, echo sounder may be turned off.
- **Engine Room:** One steering pump, main engine operating at sea speed.

3.2.9.4 Changeover Process

The transition between different operational modes must be carried out efficiently, with proper **coordination between the bridge and engine room**.

- Changeover points and timing must be **marked in the voyage plan**.
- The **Engine Room must be informed in advance** via telephone unless otherwise specified by the Master or Chief Engineer.

- The Engine Room must **confirm status changes** back to the bridge once the requested mode is established.
- A **logbook entry must be made** on both the **Bridge and Engine Room logbooks**, including position and time.

3.5 Watchkeeping and Navigation

3.2.10.1 Watch Changeover

A proper **watch handover** ensures continuity in safe navigation. The OOW must not change over the watch **during collision avoidance maneuvers or course alterations**.

- The **relieving officer must be fully fit for duty**. If there are concerns about fatigue, illness, or impairment due to alcohol or drugs, the **Master must be informed immediately**.
- The **relieving officer must confirm that all watch members are prepared** and adjusted to night vision when applicable.

Before assuming the watch, the **relieving OOW must confirm**:

- The ship's **position, course, speed, and draft**.
- The course plotted on the chart.
- Prevailing/predicted **tides, currents, weather, and visibility**.
- The operational condition of **navigational and safety equipment**.
- Gyro and magnetic **compass errors**.
- Nearby **traffic and navigational hazards**.
- Expected **engine status and maneuvering requirements**.
- ECDIS **safety parameter settings**.

The OOW must **not take over the watch** unless fully satisfied with the situation. If in doubt, the **Master should be consulted immediately**.

3.2.10.2 Daily Tests and Checks of Navigational Equipment

The **Second Officer** must conduct **daily checks of all navigational equipment** at sea using **form VO 49**.

- Built-in test functions should be used frequently, including **self-tests for alarms**.
- Checks should confirm that equipment is operating correctly and communicating properly with other bridge systems.

3.2.10.3 Lookout Requirements

A **proper lookout** must be maintained **at all times** using sight, hearing, and **all available navigational aids**.

- The OOW must ensure that **no other duties interfere** with lookout responsibilities.
- The **helmsman is not considered a lookout** when steering.
- Electronic navigation aids (e.g., ECDIS, radar, ARPA, AIS) **do not replace** the need for a visual lookout.

The lookout is responsible for identifying:

- **Collision risks** with other vessels.
- **Navigational hazards** such as wrecks, floating objects, ice, or uncharted obstructions.
- **Risk of grounding**.
- **Weather changes affecting navigation**.

- **Navigational aids**, including buoys and lights.
- **Ships, aircraft, or persons in distress**.
- **Security threats**, especially in piracy-prone areas.

Lookout personnel must remain **on the bridge** for their entire watch and **avoid unnecessary conversation**.

3.2.10.4 Sole Lookout Conditions

Under **STCW regulations**, the OOW may serve as a **sole lookout** in **daylight hours** when the **Master has determined it is safe**.

Factors to consider:

- **Weather and visibility**.
- **Traffic density**.
- **Proximity to navigational hazards**.
- **Ship defects affecting navigation**.
- **Compliance with security requirements**.
- **Availability of additional crew if required**.

Before approving a **sole lookout**, the Master must ensure that:

- The **OOW is fit for duty**.
- The OOW **can manage all responsibilities** without assistance.
- Backup personnel **are available if needed**.

If **any doubt arises**, an additional **lookout must be assigned**.

3.2.10.5 Steering and Helm Control

- The OOW must **anticipate the need** to station a helmsman and switch to **manual steering** well in advance of **hazardous situations**.
- The transition from autopilot to **manual control must be carefully managed**.

3.2.10.6 Coastal Navigation

- **The most suitable charts must be used** for coastal passage.
- The OOW must identify and verify all **navigational marks** and ensure:
  - The ship's **position is plotted at recommended intervals** (VO 57).
  - **Radar, ECDIS, and visual bearings** are used together for navigation.

3.2.10.7 Coastal Navigation Checklist

- Charts and nautical publications **are up to date**.
- The **voyage plan (VO-30) has been reviewed**.
- Local/coastal **warning broadcasts are being monitored**.
- Participation in **area reporting systems is confirmed**.
- The course is **laid off well clear of obstructions**.
- The ship’s position **is being fixed at regular intervals**.
- Gyro and magnetic compass errors **are checked regularly**.

3.2.10.8 Navigation in Restricted Visibility

Restricted visibility is defined as **visibility less than 4 nautical miles**.

When restricted visibility is encountered, the OOW must:

- **Comply with COLREGS and the Master's standing orders**.
- **Regulate the ship's speed**.
- **Post additional lookouts**.
- **Engage manual steering**.
- **Make appropriate sound signals**.
- **Activate navigational lights**.
- **Operate both radars**.
- **Inform the Master immediately**.

If restricted visibility is expected, **these actions should be taken in advance**.

The Master must ensure that:

- **Adequate bridge procedures** are established.
- **All navigational aids are effectively used**.
- **Crew fatigue is managed**, ensuring proper rest periods.

3.2.10.9 Restricted Visibility Checklist

Before entering **restricted visibility conditions**, the OOW must confirm that:

- **Radar and ARPA** are fully operational.
- **Manual steering** is engaged.
- **VHF is functional**.
- **Sound signals are operational**.
- **Navigation lights are switched on**.
- **Both radars are being used effectively**.
- **Echo sounder is monitored (if depth requires)**.
- **Lookouts are posted**.
- **The Master and engine room are informed**.
- **The ship is proceeding at a safe speed**.
- **Anchoring has been considered if necessary**.

3.2.10.10 Calling the Master

The OOW must **immediately inform the Master** in the following situations:

- If **visibility deteriorates** to a level requiring intervention.
- If **nearby vessel movements are concerning**.
- If the ship is experiencing **difficulty maintaining course**.
- If expected **navigational marks are not sighted** at the designated time.
- If unexpected **landmarks, buoys, or shallow depths** are observed.
- If the **engines, steering, or essential navigational equipment fail**.
- If **severe weather risks** arise.
- **Activation of critical bridge alarms** related to navigation, steering, or propulsion.

The **OOW must also take immediate action** to ensure ship safety before calling the Master.

3.2.10.11 Navigation in Confined Waters

Navigating in **confined waters**, with or without a Pilot, requires **heightened alertness**.

- **The ship's position must be plotted** using VO 57 recommendations.
- **All available navigational aids** must be used.
- The **Master must be on the bridge** for all critical passages.
- **Casual visitors must be prohibited**, and unnecessary conversation minimized.

If the **watch must be extended**, the schedule should be **adjusted to avoid crew fatigue**.

3.2.10.12 Overtaking and Trapping Maneuvers in Confined Waters

- In **confined waters**, overtaking ships experience **bow-in and bow-out moments**, affecting maneuverability.
- Speed changes during overtaking can cause a **trapping scenario**, leading to loss of control.
- The bridge team must **anticipate interactions with other vessels** and adjust speed accordingly.

3.2.10.13 Navigation in Congested Waters

- **Congested waters limit maneuverability**, requiring heightened situational awareness.
- The Master should **increase bridge manning levels** when entering congested waters.
- **Hand steering should be considered**, and multiple steering motors used if possible.
- **Radar and ARPA plotting must be used** for systematic collision avoidance.
- **Long-range scanning should be used** to detect hazards early.

When transiting areas like the **Malacca and Singapore Straits**, IMO routeing regulations must be followed.

3.6 Ship's Draft, Manoeuvring, and Adverse Conditions

3.2.11.1 Ship's Draft and Maneuvering Information

- The **Master must ensure** that the ship's **draft is always available** to the OOW throughout the voyage.
- Draft details must be **displayed in the wheelhouse** and updated as needed.
- The **Chief Officer must record any changes in draft** due to ballasting operations.

A **wheelhouse poster** must be placed on the bridge containing:

- **Ship's maneuvering characteristics**, including turning rates, heel effects, and stopping distances.
- **Squat effect** and how it changes with speed.
- **Main engine operation, propulsion limits, and emergency procedures**.

Ship handling training for **Chief Officers** should be conducted **during port entries, departures, and mooring operations**, with briefing, execution, and debriefing recorded.

3.2.11.2 Bridge Monitoring Systems

The **OOW is responsible** for monitoring the operational status of the following systems on the bridge:

- **Fire detection**
- **Watertight integrity**
- **Machinery condition monitoring**

- **Radio communications**
- **Ballast control systems**
- **Specialized gas pressure or cargo systems** (if applicable)

Key equipment tests before sailing:

- **Bridge and engine room telegraphs**
- **VHF radiotelephones**
- **Ship's whistle and general emergency alarm**
- **Steering gear changeover tests**

3.2.11.3 Ocean Navigation and Weather Routing

- Ocean passages may be monitored by **weather routing services**, which the Master must follow as far as **practicable** while maintaining **safe navigation**.
- **Ship's position must be plotted at regular intervals** using **VO 57**, ensuring accuracy with **multiple position-fixing methods**.
- Participation in **reporting systems (e.g., AMVER)** is recommended where applicable.

Ocean Navigation Checklist

- Are **charts and publications updated**?
- Has the **Passage Plan (VO-30) been reviewed**?
- Are **Navarea warnings monitored**?
- Are **compass errors checked each watch**?

3.2.11.4 Weather and Heavy Weather Precautions

- **Masters must obtain and use all available meteorological forecasts** to avoid severe weather.
- **All tankers must follow weather routing services** for all voyages, including coastal transits.

If winds exceed **force 6**, the Master must:

- Take necessary **evasive actions** (reduce speed, alter course, or heave to).
- Notify the **Office** and contact the weather routing company for updated guidance.
- Avoid **hurricanes, typhoons, and Tropical Revolving Storms**.

If the vessel encounters **heavy weather**:

- **Reduce RPM to prevent structural stress**.
- **Adjust course to reduce wave impact**.
- If necessary, **heave to avoid shipping heavy seas**.
- Report position **every 12 hours** to the Office.

3.2.11.5 Ship Handling in Heavy Weather

- The ship must **never be forced ahead at high speeds** in rough seas, which can cause **serious structural damage**.
- If adverse conditions persist, the **Master must adjust speed and course** to reduce impact forces.
- Engine RPM must be **adjusted to prevent slamming** and structural fatigue.

Heavy Weather Checklist

- Are **anchors and cables secured**?

- Are **hatch covers properly battened down**?
- Have **lifeboats and lifesaving equipment been secured**?
- Have **watertight doors and vents been properly closed**?
- Are **mooring ropes stored and secured**?
- Has the **steering system been switched to manual control**?
- Is the **engine room manned** if required?

Work on deck should only be performed **if absolutely necessary** and must be **risk-assessed before starting**.

3.2.11.6 Deviation Policy

- The Master and Owners are required to complete the voyage **without deviation** unless justified for safety or emergency reasons.
- Any deviation must be **immediately reported to the Office**, along with:
  - **Reason for deviation**
  - **Time and date of deviation and return to the planned route**
  - **Fuel consumed during deviation**
  - **Logbook entries and supporting records**

Common reasons for deviation:

- **Medical emergencies**
- **Search and Rescue (SAR) operations**
- **Extreme weather avoidance**

3.2.11.7 Arrival and Port Entry Preparation ADD PSC CHECKLIST FORM

Before entering port, the following **factors must be reviewed**:

- **Port information, sailing directions, and local navigational warnings**.
- **Weather, tides, and current conditions**.
- **Under keel clearance and any draft restrictions**.
- **Cargo/ballast adjustments required for port entry**.
- **Pilot boarding arrangements and VHF communication channels**.
- **Steering and engine tests completed** before maneuvering.
- **Crew notified of stand-by time for mooring operations**.
- **Berthing details confirmed**, including:
  - Side to berth.
  - Shore gangway arrangements.
  - Mooring requirements.

Two days before arrival, the Master must **personally verify** compliance with Port State Control (PSC) requirements.

Failure to comply with arrival preparation procedures may be considered a serious breach of operational responsibilities.

3.7 Anchoring

3.2.12.1 Readiness for Anchoring

- Before entering port, maneuvering, or transiting canals, **both anchors must be ready for emergency use**.
- After ocean passages exceeding **10 days**, additional precautions are required:
  - **Walk out** both anchors under power to the **waterline and back**, securing them with brakes and bow stoppers.
  - Ensure the **windlass, anchors, and cables are maintained** and shackles are properly marked.

3.2.12.2 Anchoring Procedures

Anchoring is a critical operation requiring **precise planning, teamwork, and vigilance**.

Pre-Anchoring Considerations

- **Holding ground and depth of water**.
- **Obstructions, currents, local winds, and weather conditions**.
- **Other anchored vessels and traffic density**.
- **Amount of cable required based on vessel displacement**.
- **Contingency anchorage in case the planned spot is unavailable**.
- **Method of anchoring: let go or controlled pay-out**.

The anchor should **never be dropped unless all safety factors have been verified**.

3.2.12.3 Anchoring in Shallow vs. Deep Water

Anchoring in shallow water (≤30 meters depth)

- Walk back the cable **until the anchor is 5-6 meters from the seabed**, then release it normally.
- This prevents **anchor damage and uncontrolled chain run-out**.

Anchoring in deep water (>30 meters depth)

- The entire anchoring operation must be **done under power**.
- The anchor must be **walked back all the way down** to prevent excessive momentum.
- **Windlass must remain engaged** unless in emergencies.
- Before anchoring, conduct a **pre-anchoring meeting** with the Master, Chief Officer, Bosun, and OOW.

If anchoring in **30-75 meters**, a **routine risk assessment** is required.

If anchoring in **>75 meters**, a **non-routine risk assessment** must be conducted and approved by the Office.

3.2.12.4 General Anchoring Guidelines

- Anchors must be **cleared and ready for use** before maneuvering.
- The windlass must be **fully operational**, and required personnel must be at their stations.
- **Always walk the anchor out of the hawse pipe** before letting go.
- Avoid **dropping the anchor near small craft or tugs**.
- If wind speeds exceed **Beaufort Force 7**, consider staying adrift rather than anchoring.
- Maintain **continuous bridge-fo'c'sle communication** during anchoring operations.
- If heaving anchor, ensure it is **not twisted and flukes are seated correctly**.

3.2.12.5 Approaching a Congested Anchorage

- **Confirm availability of anchorage space with VTS** before approach.
- Use **minimum safe speed** and proper **Bridge Watch Condition**.
- Avoid passing **too close to the bow of anchored vessels**.
- **Monitor position visually, by radar, and by ECDIS** to ensure safe anchoring.

3.2.12.6 Anchor Watch Procedures

A continuous **anchor watch** must be maintained. The OOW must:

- Display correct **anchor lights and day shapes**.
- Ensure a **proper lookout** is posted.
- Monitor **anchor position** regularly using **visual bearings, radar, and GPS**.
- Check **compass error, weather conditions, and tidal changes**.
- Notify the **Master immediately if the vessel drags anchor**.
- Implement **anti-piracy measures** if in high-risk areas.

If wind force **exceeds BF 7 or swell exceeds 2 meters**, the Master should **heave anchor and drift safely**.

3.2.12.7 Additional Precautions for Congested Anchorages

In areas such as **Singapore and Fujairah**, the following additional precautions apply:

- The **engine room must be manned**.
- The **main engine must remain on standby** based on traffic congestion.
- Use **ECDIS, radar, and GPS anchor guard rings** to monitor dragging.
- Maintain heightened **situational awareness**, as other vessels may not keep proper anchor watches.

3.2.12.8 Emergency Anchoring

- Both anchors should be **ready for immediate use** in case of an emergency.
- If **emergency anchoring is required**, both anchors should be deployed to evenly distribute strain.
- Deploying **both anchors reduces individual chain stress** and enhances stopping power.
- The OOW must always be **prepared to alert the Master** when emergency anchoring may be required.

3.2.12.9 Anchoring and Anchor Watch Checklist

- Has an **anchoring plan been prepared**, considering:
  - Speed reduction before arrival.
  - Wind and current direction.
  - Tidal stream effects.
  - Adequate sea room.
- Have the following personnel been notified?
  - Master
  - Engine room
  - Anchor party
- Have the following **equipment checks** been completed?
  - Engine and telegraph tested

- Windlass tested before arrival
- Anchor lights and sound signals operational
- Bridge-to-fo'c'sle communication established

- Is an **anchor watch** established, with regular position checks recorded?
- Has the **engine standby notice been issued** in case of worsening weather?

3.8 Navigation in Pilotage Waters

3.2.13.1 Overview

- The **Master retains full authority and responsibility** for the vessel, except in the **Panama Canal**, where the **Pilot has overriding authority**.
- The Pilot acts **only in an advisory capacity**. If the Master or OOW deems the Pilot's advice unsafe, they must **intervene diplomatically**.
- In extreme cases, the Master may **take direct control of the vessel**.
- If tugs are fastened, the Master must **carefully assess control** before overriding the Pilot's decisions.

In case of **doubt regarding the Pilot's competence**, the Master must:

- Request a **replacement Pilot**.
- Inform the **Operations Manager**.
- File a **Letter of Protest** to the Pilot Authority, with a copy to the Operations Manager.

If an incident occurs:

- The **Pilot remains under the Master's authority** and is considered part of the **Bridge Team**.
- The **Pilot must undergo alcohol and drug testing** if required.
- The Master must **not sign any document exonerating the Pilot from liability**.

During prolonged pilotage, if the Master leaves the bridge:

- A **senior officer (preferably the Chief Officer)** must be present.
- The OOW must **immediately call the Master** if the Pilot's actions are unclear or unsafe.

3.2.13.2 Preparation for Pilotage

Before arrival, a **pre-arrival exchange of information** must be conducted with the port authority. The Master should obtain details on:

- **Pilot boarding point, speed, and arrangements**.
- **Berthing and anchorage details**.
- **Reporting and communication procedures**.

This information must be reviewed and integrated into the **passage plan** before pilotage.

3.2.13.3 The Pilotage Plan

- The **berth-to-berth passage plan** must include a detailed **pilotage plan**, approved by the Master.
- The plan should be **updated** based on the **Master-Pilot Exchange (MPX)**.
- Any **plan modifications** must be documented and agreed upon before execution.

The Master should be prepared to provide port authorities with:

- **Ship particulars**.
- **Cargo and dangerous goods declarations**.

- **Arrival and berthing intentions**.

3.2.13.4 The Pilot

- The Pilot must be **qualified, certified, and well-rested**.
- The Master may **request a replacement Pilot** if there are concerns about competency.
- In optional pilotage areas, the Master must **inform the Office before employing a deep-sea pilot**.
- If the charterers advise against taking a Pilot, the **Master must get company approval before proceeding without one**.

The Pilot is required to report:

- **Safety hazards** affecting navigation or pollution prevention.
- **Accidents or near-misses** during pilotage.
- **Deficiencies in navigational aids** on board or in port.

3.2.13.5 Bridge Team Responsibilities During Pilotage

To effectively support the Pilot, the Bridge Team must:

- **Verify and plot the ship's position** independently of the Pilot.
- **Monitor under keel clearance (UKC)**.
- **Cross-check Pilot orders** and confirm execution.
- **Track rate of turn, rudder angle, and engine RPM**.
- **Identify and address misunderstandings immediately**.

The Bridge Team must never assume that the **Pilot alone is responsible for safe navigation**.

3.2.13.6 Use of Ship's Equipment by the Pilot

The **Pilot may use** the following equipment:

- Radar/ARPA
- ECDIS
- VHF
- AIS
- Gyro repeaters

The **Pilot must not operate**:

- Steering controls
- Engine telegraphs
- Bow thrusters

Exception: In urgent situations, the Master may permit the Pilot to access additional equipment as necessary.

3.2.13.7 Safe Pilot Transfer

- Pilot embarkation/disembarkation procedures must be **confirmed with the Pilot station in advance**.
- **Bridge team integrity must not be compromised**—the OOW and lookout must remain on the bridge.
- The **Pilot ladder and embarkation area must be inspected before use**.
- The Pilot should wear **appropriate personal protective equipment (PPE)**.

For **helicopter transfers**, the ICS **Guide to Helicopter/Ship Operations** must be followed.

3.2.13.8 Master-Pilot Exchange (MPX)

A proper **MPX must be conducted** immediately after Pilot boarding.
The exchange must include but not be limited to:

- **Proposed passage plan and anticipated speed changes**.
- **Weather, tides, and traffic conditions**.
- **Tug usage and berthing plan**.
- **Ship handling characteristics and maneuvering limitations**.
- **Abort points and emergency procedures**.

If multiple Pilots are used, each must participate in the MPX, and the **Master must ensure a proper handover between Pilots**.

3.2.13.9 Berthing and Mooring Operations

- The **Pilot and Master must discuss maneuvering and mooring plans** in advance.
- The Bridge Team should track **tug movements and mooring boat operations**.
- Orders to tugs must be **confirmed and understood by the Bridge Team**.
- The Pilot must coordinate:
    - **Tug movements and push/pull locations**.
    - **Safe operation of mooring boats**.
    - **Use of ship's thrusters and main engine**.

3.2.13.10 Tug Operations

- **Speed should not exceed 6 knots** when making fast to a tug.
- Tug lines should be secured at **designated strong points only**.
- The propeller and thrusters **must be clear** before engaging tugs.
- Tug radars should be **switched off when approaching the vessel**.
- Towlines must be handled carefully to prevent **whiplash injuries**.

Letting go a tug:

- Tug lines must only be released **after direct communication with the tug Master**.
- The towline must be eased out **in a controlled manner** to prevent fouling the tug's propeller.

3.2.13.11 Preparing for Outbound Pilotage

- The outbound pilotage plan should be reviewed **after berthing** and updated before departure.
- A **full MPX must be conducted** before departure.

3.2.13.12 Use of Deep-Sea Pilots

- Deep-sea Pilots can enhance safety but are **not mandatory under SOLAS**.
- If a deep-sea Pilot is recommended, the Master must **carefully consider the need before declining**.

3.2.13.13 Shifting Within Port

- If shifting between **terminals, anchorage, or berths**, Checklist **VO-70** must be completed.

- All bridge and engine controls must be tested before shifting.
- Shifting within port means shifting between terminals, terminal to inner anchorage & vice versa with a Pilot on board while the vessel is still within the fairway buoy.

3.9 Speed, Engine Breakdown, and Time Management

3.2.14.1 Vessel Speed Management

The vessel's speed must be **optimized for both efficiency and safety**, considering:

1. **Charter Party speed** – Contracted operational speed.
2. **Technical limits** – Machinery and structural constraints.
3. **Weather and sea conditions** – Avoid excessive speed in rough seas.
4. **COLREGS compliance** – Safe navigation and collision avoidance.
5. **Fuel economy** – Balancing performance with consumption.

- **Charter Party speed must be maintained** unless conditions require adjustments.
- **In rough weather, avoid unnecessary engine racing**, which can lead to fuel wastage and structural damage.
- Before each voyage, the **Master must verify speed instructions** with the Charterers and consult the Office if any contradictions arise.
- **Charterers must discuss speed adjustments with Owners, not directly with the Master**.

3.2.14.2 Engine Breakdown Procedures

In the event of an engine breakdown, the Master must **immediately notify the Office**, providing:

- **Time, date, and position** of the breakdown.
- **Detailed description of the issue**.
- **Estimated repair duration**.

Once repairs are completed, the Master must report:

- **Total time and distance lost**.
- **Speed and fuel consumption needed to recover lost time**.
- **Confirmation of whether the vessel can meet performance requirements**.

This information must be kept **strictly confidential** and communicated **only to the Office**.

3.2.14.3 Time Management Onboard

- The vessel’s time must be **adjusted according to longitude and destination**.
- The **Navigating Officer is responsible** for setting clocks.
- Time changes should be **communicated in advance** to all key personnel.
- The ship must **arrive and depart with local time settings**.
- Adjustments should be made **considering daylight hours** to align with operational schedules.

3.10 Operation and Maintenance of Bridge Equipment

3.2.15.1 General Maintenance

- **All navigational aids must be operational**, with defects reported to the Office immediately.

- **Routine maintenance should only be performed by trained officers**, and shore technicians should be called only when necessary.
- **Navigational alarms should be properly set** and never muted or set to unsafe levels.
- **Integrated systems require sensor accuracy**, and the OOW must verify sensor inputs at every watch change.

3.2.15.2 Radar and ARPA

Radar Usage and Maintenance

- **Both radars must be fully operational at all times** and used for:
  - Position fixing and monitoring.
  - Collision avoidance.
  - Plotting, parallel indexing, and tracking targets.
- **Performance checks** must be carried out:
  - Before departure.
  - At least once per watch (every 4 hours).
  - After major course alterations.
- **Regular radar checks include:**
  - Heading marker alignment verification.
  - Checking for gyro errors.
  - Ensuring correct gain, sea clutter, and rain clutter settings.
  - Ensuring echo returns are sharp and clear.
- **Automatic radar plotting aid (ARPA) settings must be optimized for:**
  - Accurate CPA (Closest Point of Approach) and TCPA (Time to CPA) calculations.
  - Displaying true motion for tracking targets accurately.
  - Setting appropriate alarm ranges for guard zones to detect targets early.
- **Speed input for collision avoidance should always be through water**; manual entry should be used if the log fails.
- **Parallel indexing is mandatory in coastal navigation** for safe monitoring of the ship's position.

Radar Image Overlay (RIO) on ECDIS

- **Radar images can be overlaid on ECDIS**, but:
  - Alignment must be checked frequently.
  - The OOW must ensure that overlay settings do not obscure critical chart details.
  - Any discrepancies between radar and ECDIS positions must be investigated immediately.

Detection and Tracking of Targets

- **Radar range selection is critical for situational awareness:**
  - **Long-range scanning** (12-24 NM) helps detect distant hazards and plan early course alterations.
  - **Medium-range scanning** (6-12 NM) helps monitor traffic movements.
  - **Short-range scanning** (0.5-6 NM) is used for precise maneuvering and collision avoidance.

- **At all times, regular scanning at different ranges should be performed** to ensure situational awareness.

ARPA and Collision Avoidance

- **AIS should not be relied upon for collision avoidance**; ARPA remains the primary tool.
- **The accuracy of ARPA tracking depends on:**
  - Reliable heading and speed input.
  - Correct tuning of the radar.
  - Avoiding excessive reliance on vector displays—plotting must be verified manually.
- **Multiple observations (over time) are required for reliable collision avoidance decisions.**
- **CPA/TCPA alarms should be properly set** and adjusted based on traffic density.

AIS Targets on Radar

- **AIS targets displayed on ARPA should not be confused with radar-tracked targets.**
- **AIS data may be inaccurate** due to errors in the transmitting vessel's system.
- **AIS should be used to enhance situational awareness but not for collision avoidance decisions.**

Limitations of Radar and ARPA

- **Small targets like fishing boats, ice, or floating containers may not be detected.**
- **Weather conditions (rain/snow) can reduce radar efficiency.**
- **Structural obstructions on the ship may create blind spots.**
- **Strong currents can affect CPA/TCPA calculations.**

Radar and Navigation in Restricted Visibility

- **Radar must be used proactively in poor visibility.**
- **Frequent radar plotting is required in restricted visibility conditions.**
- **OOW must ensure that all available means (visual, auditory, and electronic) are used to maintain a proper lookout.**

3.2.15.3 ECDIS and Electronic Charts

- **ENC updates must be regularly applied**, and manual position fixes should verify accuracy.
- The OOW should confirm **safety depth, safety contour, and alarm settings** before departure.
- **ECDIS must not be solely relied upon**—visual and radar checks must complement its use.
- **Passage plans should be verified on both primary and backup ECDIS** before departure.

3.2.15.4 Steering Gear and Auto-Pilot

- **Manual steering must be engaged in restricted waters** and during course alterations.
- **Off-course alarms must be set correctly**, and the OOW must ensure timely responses.
- **Emergency steering procedures should be well understood** by all bridge officers.

3.2.15.5 Compass Systems

- **Gyro and magnetic compass errors must be checked and logged** at each watch.
- **Deviation curves should be verified annually**, and significant discrepancies must be reported.
- **Changeover procedures between master and slave gyros must be clearly posted**.

3.2.15.6 Voyage Data Recorder (VDR)

- VDR function checks must be performed daily, and records maintained.
- In case of an incident, data should be downloaded and archived immediately.
- Monthly VDR drills must be conducted, with officers trained in data retrieval.

3.2.15.7 AIS and Communication Systems

- **AIS data must be updated before departure**, and set to low power while berthed at tanker terminals.
- **AIS should not be used for collision avoidance**—it is a situational awareness tool.
- **VHF radios should only be used for necessary communication**, and logs must be maintained.

3.2.15.8 Echo Sounders and Speed Logs

- **Echo sounder alarms must reflect under-keel clearance requirements**, with data logged.
- **Speed log readings should be recorded at each watch change** and verified against GPS data.

3.2.15.9 BNWAS and Bridge Alarms

- **BNWAS must be operational at all times at sea** and tested before departure.
- **Only the Master can adjust the dormant period settings**, which must not exceed 12 minutes.
- **BNWAS should be switched on from All cast off to First line Ashore.**

3.2.15.10 Hydrographic Publications and Charts

- **All charts and publications must be up to date**, and corrections logged.
- **Electronic and paper charts must align**, and passage plans should be verified on both formats.

3.2.15.11 Sound and Signal Equipment

- Navigation lights, sound signals, and Aldis lamps must be checked daily.
- Whistles and horns must be tested regularly, ensuring easy operation in emergencies.

3.11 Under Keel Clearance (UKC) and Shallow Water Navigation

3.2.16.1 Shallow Water and Squat

Squat is the **increase in draft** due to reduced water pressure when navigating in shallow waters. This effect begins when the water depth is **less than 1.5 times the vessel's draft**.

Indicators of Shallow Water Conditions:

- Increased trim by bow or stern.
- Increased wave-making, especially at the bow.
- Reduced maneuverability and rudder effectiveness.
- Increased turning circle and stopping distance.

- Sudden vibrations.
- Reduced rolling, pitching, and heaving motions.
- Visible mud or sediment in the water around the hull.

Mitigation: Reduce speed **immediately** to minimize squat effects.

3.2.16.2 Under Keel Clearance (UKC)

UKC is the **vertical distance between the ship's keel and the seabed**. Adequate UKC is **mandatory** for safe navigation in all conditions.

Responsibilities:

- **Master:** Ensures safe UKC at all times and approves the passage plan.
- **Navigating Officers:** Monitor UKC conditions, verify calculations, and update passage plans accordingly.

3.2.16.3 Factors Affecting UKC

A. Water Level Factors

1. **Tidal variations** – Astronomical tides and meteorological conditions impact water levels.
2. **Meteorological effects** – Winds and atmospheric pressure may raise or lower water levels.
3. **Water reference level** – Always base UKC on real-time depth readings, not just chart datum.

B. Ship-Related Factors

1. **Static draft** – Affected by cargo, ballast, and water salinity.
2. **Dynamic draft (Squat)** – Increases with speed and hull proximity to the seabed.
3. **Sagging and hogging** – Longitudinal stresses may alter draft distribution.

C. Bottom Factors

1. **Seabed composition** – Soft mud vs. hard rock affects vessel stability.
2. **Survey accuracy** – Depth soundings may be outdated or inaccurate.
3. **Sedimentation & dredging** – Sandbanks and siltation may reduce charted depths.

D. Hydrographic Data Reliability

- **Paper charts** – Depth soundings may be outdated.
- **ECDIS CATZOC** – Determines hydrographic data accuracy (A1 = best, U = unassessed).

3.2.16.4 UKC Requirements Based on Navigation Area

Navigation Area	Minimum UKC Required
Open Sea	50% of deepest static draft
Confined Waters & Channels	15% of deepest draft or 1.0m (whichever is greater)
Port & River Navigation	10% of deepest draft or 0.60m (whichever is greater)
Alongside Terminal/Berth	0.60m for draft ≤ 11m; 0.90m for draft > 11m

- **Local Authority Requirements:** If a port mandates a higher UKC, the vessel must comply.
- **Pilotage:** Discuss UKC risks with the pilot before arrival/departure.

3.2.16.5 UKC While at Berth or SBM/CBM

- Vessel must **always remain afloat** while alongside.

- UKC must account for cargo operations, tidal changes, and vessel movement.
- If terminal requirements exceed company policy, the Master must comply.

Echo Sounder Alarm Settings:

- Alarm must be set **10% above the expected minimum UKC** for early warning.

3.2.16.5 UKC Policy Statement

Vessel must **always remain afloat** while alongside. The vessel must always remain afloat, ensuring safe under keel clearance (UKC) at all times. The minimum UKC requirements are: 50% of the deepest static draft in open sea, 15% or 1.0m (whichever is greater) in confined waters and channels, and 10% or 0.60m (whichever is greater) in ports, rivers, and at SBM/CBM. When alongside a terminal or berth, UKC must be 0.60m for drafts ≤11m and 0.90m for drafts >11m. If a port or terminal requires a higher UKC, the vessel must comply.

3.2.16.7 Master's Actions if UKC is Not Met

If UKC policy cannot be met, the Master must:

1. **Assess vessel conditions:** Loading, discharging, or transiting.
2. **Determine minimum dynamic UKC:** Identify where and when UKC will be lowest.
3. **Adjust transit plan:** Use high tide windows for port entry/exit.
4. **Reduce draft if possible:** Adjust ballast or shift cargo.
5. **Lighter cargo if necessary:** Partial offloading before entering port.
6. **Confirm pilot's assessment:** Discuss UKC risks with the pilot.
7. **Consider additional precautions:** Use extra tugs or reduce speed.
8. **Conduct risk assessment:** If UKC remains insufficient, a **non-routine risk assessment** must be submitted for office approval.

3.2.16.8 Air Draft Considerations

- Air draft is the distance from the **waterline to the vessel's highest point**.
- It must be considered when **passing under bridges, power lines, and port structures**.
- **Minimum clearance: 1 meter** above the highest point of the vessel.

3.2.16.9 Grounding Prevention & Actions

If grounding occurs:

1. **Immediately notify the office** with details of location, tide, and conditions.
2. **Assess hull integrity and refloating risk.**
3. **Take soundings around the vessel** to determine exact seabed profile.
4. **Check ballast status** and **avoid excessive maneuvers** that could worsen grounding.
5. **Do not engage tugs or salvors** without office approval unless there is immediate risk to life or vessel safety.
6. **Follow emergency checklist** as per the company's ECM manual.

3.12 Working with Tugs and Line Handling Boats

Tug assistance is essential for maneuvering in confined waters, but the interaction forces between a tug and a vessel must be carefully managed. Tugs should avoid operating near the bow and stern where rudder effects and water flow can create strong interaction forces, increasing the risk of loss of control.

Key Considerations for Tug Operations:

- **Tug Selection & Power:** The Master should determine the required number and horsepower of tugs based on weather, navigational constraints, vessel maneuverability, and port requirements. Excessive bollard pull should be avoided to prevent damage to ship equipment.
- **Communication & Coordination:** Early communication with the tug master is crucial to clarify rendezvous positions, towing methods, expected transit speed, and tug positioning. The pilot's advice should be considered but critically assessed.
- **Towing Line Management:** The Master must confirm whether the vessel's lines or the tug's lines will be used, ensuring proper securing methods. Towlines should never be led transversely across the tug's beam to prevent girting. A 'gob rope' should be used where necessary.
- **Safe Handling & Monitoring:** The deck crew should be prepared with heaving lines and towing gear before the tugs arrive. The towline condition must be monitored continuously, and any abnormalities reported to the bridge.
- **Maneuvering & Vessel Readiness:** The vessel should be on manual steering, navigation signals properly displayed, and engines on standby. The rendezvous area should be assessed for obstructions and traffic density.
- **Documentation & Tug Receipts:** The Master should ensure that tug operation times (making fast and letting go) are correctly recorded. Receipts should not be pre-signed for departure unless explicitly required, and any confirmation should be done via the ship's agent.

By maintaining effective coordination and situational awareness, safe and efficient tug operations can be ensured during berthing, unberthing, and port maneuvering.

3.13 Fire / Safety Rounds

Fire, safety, and security rounds are essential for preventing hazards, ensuring personnel safety, and maintaining pollution prevention measures. These rounds must be conducted systematically at sea, at anchor, and in port.

At Sea or Anchorage:

- Fire rounds should be conducted **from 2000 to 0600 hours** at the end of each watch.
- Focus on areas with potential fire hazards, including:
  - Accommodation alleyways.
  - Electrical rooms (radio room, gyro room, motor rooms).
  - Spaces with heating equipment (galleys, pantries, laundries, drying rooms).
  - Public areas (mess-rooms, lounges, recreation rooms, gym).
  - Other spaces designated by the Master or Safety Officer.
- Check for ignition sources and fuel hazards, even in spaces with fire detection systems.
- Log each round in the **deck logbook** and ensure compliance with work/rest hour records.

In Port:

- The **Deck AB** must conduct fire patrols as part of security rounds.
- Ensure checks cover potential fire risks, security breaches, and pollution hazards.
- Document all inspections in the **deck logbook or port logbook**.

Routine and thorough fire/safety rounds help in early hazard detection, minimizing risks, and ensuring vessel compliance with safety protocols.

3.14 Master's Standing Orders

Closest Point of Approach (CPA), Time to Closest Point of Approach (TCPA), Bow Crossing Range (BCR), Safety Frame, and Cross Track Limits

The Master and Bridge Team must ensure that the vessel's CPA with other vessels or structures complies with the Rules of the Road and adheres to local regulations. The Master shall use discretion to determine CPA, TCPA, BCR, and Cross Track limits based on navigational circumstances.

Company Guidance for Limits:

Parameter	Open Seas	Coastal Waters
CPA (Closest Point of Approach)	2.0 NM	1.0 NM
TCPA (Time to Closest Point of Approach)	25 minutes	20 minutes
BCR (Bow Crossing Range)	3.0 NM	2.0 NM
Cross Track Limits	1.0 NM	0.5 NM
Fairways/Approaches/In port	Master's Discretion	

Safety Frame Limits:

- **Refer to ECDIS Manual** for the correct application of the safety frame settings.

Important Notes on CPA, TCPA, BCR, Safety Frame, and Cross Track Limits:

- The above values are **guidelines**. The Master may **increase** the CPA, TCPA, and BCR in high-risk areas (e.g., congested waters, reduced visibility, or restricted maneuvering situations).
- CPA, TCPA, and BCR should be adjusted based on vessel speed, maneuvering characteristics, and traffic density.
- In **port approaches, narrow channels, and TSS**, these values should be reassessed in coordination with the Pilot.
- Any deviation from the Company's guidance should be recorded in the **Logbook**, stating the reason for the change.
- **BCR should always be at least 3.0 NM in open sea and 2.0 NM in coastal waters** to ensure safe passing distances and avoid close-quarter situations.
- **TCPA should not be less than 25 minutes in open sea and 20 minutes in coastal waters** to provide ample time for assessing and executing collision avoidance actions.

GPS 1 & 2 Alarm Settings on ECDIS:

- Some ECDIS models may not provide a **GPS 1 & 2 comparison alarm**. In such cases, the **integrity status** (Passed/Doubtful/Failed) must be regularly checked in the **Filter Status** of sensor settings by the OOW.
- Regular cross-checking of **GPS, radar, and visual fixes** is mandatory to validate the vessel's position and ensure safe navigation.

The Master is responsible for ensuring that these parameters are adhered to at all times and reviewed based on prevailing navigational conditions.

Master's Standing Orders (Concise & Actionable)

The **Officer of the Watch (OOW)** is fully responsible for the **safety of the ship, crew, cargo, and environment** until formally relieved. **Safety takes precedence over schedule, convenience, or any prior instruction.**
If in **any doubt, call the Master immediately.**

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1. General Watchkeeping

- **Maintain a proper lookout** using visual, auditory, and electronic means.
- Follow **COLREGS, STCW, Safety of Navigation Manual, and local regulations**.
- **Course, speed, and CPA/TCPA limits must be strictly maintained**.
- **Fix the ship's position regularly** using multiple sources (GPS, radar, visual bearings).
- Ensure **navigational equipment is operational** before and during the watch.
- **Report all navigational warnings, weather updates, and equipment failures** to the Master.

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2. Collision Avoidance

- **Minimum CPA/TCPA/BCR**:
  - **Open Sea:** CPA **2.0 NM**, TCPA **25 min**, BCR **3.0 NM**
  - **Coastal Waters:** CPA **1.0 NM**, TCPA **20 min**, BCR **2.0 NM**
- Avoid **small alterations**; take **bold and early action** as per COLREGS.
- **Do not rely on VHF for collision avoidance.**
- If the situation is unclear, **call the Master**.

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3. Restricted Visibility

- Visibility **less than 4 NM** is considered **restricted**.
- **Reduce speed**, sound whistle signals, and activate radar plotting.
- Inform the **Master and Chief Engineer immediately**.

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4. Under Keel Clearance (UKC) & Squat

- **Minimum UKC Requirements**:
  - **Open Sea:** 50% of deepest draft
  - **Confined Waters/Channels:** 15% of draft or **1.0m** (whichever is greater)
  - **Port/River Navigation:** 10% of draft or **0.6m** (whichever is greater)

  - **Berth/SBM/CBM: 0.6m (draft ≤11m), 0.9m (draft >11m)**
- **Echo Sounder Alarm:** Set **10% above expected minimum UKC**.
- **Reduce speed in shallow waters to mitigate squat effect**.
- **Master must be informed if UKC concerns arise.**

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5. Speed & Course Compliance

- Maintain **safe speed** in line with COLREGS and environmental conditions.
- **Monitor gyro and magnetic compass errors** once per watch.
- Follow **Cross Track Limits (XTL):**
  - Open Sea: **1.0 NM**
  - Coastal Waters: **0.5 NM**
  - Fairway/Approach/In Port: **0.2 NM**
- Any **course deviation must have Master's approval**.

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6. Calling the Master

The **Master must be called immediately** if:

- **CPA, TCPA, or BCR limits** cannot be maintained.
- **Visibility drops below 4 NM**.
- **Navigation, steering, or propulsion issues** arise.
- **Unusual traffic or navigational hazards** are encountered.
- **Sudden weather deterioration or 3mb drop in 4 hours** is observed.
- **Security threats, piracy risks, or suspicious craft** are detected.

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7. ECDIS & Navigational Alarms

- **Primary navigation is ECDIS**, with manual cross-checking.
- **Safety Contour:** Calculated based on voyage plan.
- **Guard Zones:**
  - Open Sea: **30-60 min look-ahead**, 10x beam width
  - Coastal: **12-15 min look-ahead**, 5x beam width
  - Pilotage: **0.5-2 min look-ahead**, 1x beam width
- **AIS must be in low power mode when berthed.**
- **BNWAS must remain ON at all times.**

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8. Pilotage & Port Operations

- **Master/Pilot Exchange (MPX) must be completed before pilotage.**
- **Main engine must be tested before pilot boarding.**
- **Mooring lines must be monitored and adjusted regularly.**
- **During cargo/bunkering:**
  - Scuppers must be plugged, fire-fighting equipment must be ready.
  - **OOW must be present throughout bunkering.**
- **Stowaway search is mandatory before departure.**

9. Bridge Discipline & Watch Handover

- The **OOW must NEVER leave the bridge** until relieved.
- **No mobile phones, music, or distractions** are allowed.
- Watch handover must include:
  - **Course, position, speed, traffic, weather, and navigational hazards**.
  - **Status of radar, ECDIS, UKC alarms, and engine readiness**.
- Any **critical equipment failure must be reported immediately.**

10. Fire, Safety & Security Rounds

- **Hourly fire/safety rounds must be conducted at night.**
- **Security patrols must maintain gangway access control.**
- **Unauthorized visitors are prohibited**—log all guests and verify credentials.
- **Any suspicious activity must be reported to the Master and SSO.**

Final Instructions

If you are thinking of calling the Master, CALL HIM.

The **Master is available 24/7**, and no issue is too small to report.

⚓ **Wishing all officers safe and smooth sailing!**

Signed by all OOW with date to confirm understanding and compliance.

CHAPTER 04 – ENGINEERING PRACTICE AND PROCEDURES

4.0 Introduction

This chapter provides **engineering officers with guidance** on safe and efficient **vessel operations**, covering:

- **Watchkeeping duties and responsibilities**.
- **Machinery operations and maintenance**.
- **Emergency engineering procedures**.
- **Planned maintenance schedules**.

All **engineering personnel must be thoroughly familiar** with this chapter.

4.1 Operational Duties and Responsibilities

4.1.1 The Engine Room Department

The **Chief Engineer** is responsible for:

- Safe **operation of all machinery and plant**.
- **Sounding and recording of fuel, lube oil, and bilge tank levels**.
- **Maintenance of all machinery spaces and associated compartments**.
- **Testing and maintenance of safety and firefighting equipment**.

4.1.2 Bridge Control of Engines

- **Bridge control is the default operation mode** unless local control is necessary.

- **Engineers must be trained on emergency maneuvering procedures**.

4.1.3 Engineer of the Watch (EOW)

- The **EOW is responsible for safe engine room operations**.
- Must maintain **continuous monitoring of machinery parameters**.

4.1.4 Vessel Operations in Port

- **Chief Engineer ensures standby systems are ready**.
- **Regular bilge soundings and oil spill prevention measures must be conducted**.

4.1.5 Engineers on Standby Duties

- Engineers **must be available at all times during critical operations** (e.g., maneuvering, bunkering).

4.1.6 Change of Engineer Officers

- Outgoing and incoming engineers **must complete a handover report**.
- **Machinery defects and pending maintenance must be documented**.

4.1.7 Authority When a Superintendent is Onboard

- The **Chief Engineer retains authority**, but must **consult the Superintendent for major decisions**.

4.1.8 Routine for Taking Over Watches

- Watchkeepers **must inspect all running machinery** and **log significant readings**.

4.1.9 Standing Orders and Instructions

- The Chief Engineer **must issue daily standing orders** for watchkeepers.

4.2 Machinery Operations

4.2.1 Main Engine Operation

- **Main engines must be tested before departure**.
- **Bridge orders must be logged and confirmed by EOW**.

4.2.2 Emergency Shutdown Procedures

- **If machinery defects occur**, the Chief Engineer must:
  - **Assess the risk** and **initiate emergency procedures if necessary**.
  - **Report the incident to the Master immediately**.

4.2.3 Lubrication of Machinery

- **Proper lubrication schedules must be followed** to prevent machinery damage.

4.2.4 Bilge Examination

- Bilges must be **checked for oil accumulation and cleaned as necessary**.

4.2.5 Fuel Economy

- Engineers **must optimize fuel consumption** by:
  - Ensuring **proper combustion settings**.
  - Monitoring **excessive fuel usage** and reporting anomalies.

4.2.6 Pipeline Identification

- **All pipeline systems must be clearly labeled** according to their contents.

4.3 Main Propulsion Machinery

4.3.1 Operating Procedures

- **Engine operating manuals must be followed at all times**.
- Any deviations **must be reported to shore management**.

4.3.2 Diesel Engine Management

- **Main engines must be warmed up before use**.
- **Lube oil levels and cooling systems must be verified**.

4.3.3 Shaft Bearings & Stern Gear

- **Shaft bearings must be regularly inspected**.
- **Stern gear lubrication must be checked for leaks**.

4.3.4 Steering Gear Operations

- Steering gear **must be tested before departure**.
- **Emergency steering drills must be conducted every three months**.

4.4 Electrical Power Systems

4.4.1 Switchboard & Generator Operations

- **Generator loads must be evenly distributed**.
- **Standby generators must always be ready for use**.

4.4.2 Emergency Diesel Alternators

- **Test emergency generators weekly**.
- Ensure **fuel supply and auto-start functions are operational**.

4.4.3 Battery Maintenance

- **Batteries must be charged and inspected for corrosion**.

4.4.4 Fire Detection Systems

- **Fire alarms must remain active at all times**.
- **System shutdowns require prior Master and Chief Engineer approval**.

4.5 Machinery Maintenance & Spare Parts

4.5.1 Planned Maintenance System (PMS)

- **All maintenance must follow the PMS schedule**.
- **Machinery failures must be logged and reported**.

4.5.2 Spare Gear Management

- Spare parts must be **stored safely and labeled correctly**.
- **Critical spares must be replenished before depletion**.

4.6 Safety & Emergency Procedures

4.6.1 Hot Work & Welding Precautions

- **Welding outside the engine room requires Master's approval**.
- **Fire extinguishers must be placed near all welding operations**.

4.6.2 Emergency Action Plan

- Engineers must be trained to:
  - **Handle engine room fires**.
  - **Respond to fuel leaks and oil spills**.
  - **Manage total electrical blackouts**.

4.6.3 Voyage Repairs

- If **voyage repair teams join the vessel**, they must:
  - Be **briefed on safety procedures**.
  - Follow the **Chief Engineer's supervision**.

COMPLIANCE CHECKLIST – ENGINEERING PRACTICE & PROCEDURES

✅ **Engine Room Watchkeeping**

- Ensure **watchkeeping personnel monitor critical machinery parameters**.
- Verify **main engines are tested before departure**.
- Conduct **bilge inspections and maintain clean conditions**.

✅ **Machinery Operations & Maintenance**

- Follow **scheduled lubrication routines**.
- Maintain **fuel economy measures and optimize consumption**.
- Inspect **steering gear and conduct emergency steering drills**.

✅ **Electrical & Safety Systems**

- Test **emergency diesel generators weekly**.
- Keep **fire detection systems active at all times**.
- Ensure **batteries are inspected and maintained regularly**.

✅ **Emergency Preparedness**

- Train **engineering personnel on engine room fire response**.
- Conduct **oil spill and blackout response drills**.
- Ensure **voyage repair teams comply with safety regulations**.

CHAPTER 05 – COMMUNICATIONS

5.0 Introduction

This chapter outlines **shipboard communication procedures** to ensure:

- **Clear and efficient information exchange** between ship and shore.
- **Proper documentation of operational and emergency messages**.
- **Standardization of reporting formats** for regulatory and operational compliance.

All **Masters and Officers** must be familiar with these communication protocols.

5.1 Instructions to Masters

5.1.1 General Communication Guidelines

- All vessels are equipped with **SAT-C communication systems**.
- **Messages must be concise and to the point** to minimize transmission costs.
- **Each message is chargeable per byte**, so unnecessary details should be avoided.

5.1.2 Use of Mobile Phones

- Masters are issued **company-provided mobile phones**.
- For **urgent clarifications**, Masters should use mobile phones within network range.
- **All telephonic conversations must be followed up with a concise SAT-C message**.

5.2 Standard Formatted Telex Messages

5.2.1 General

- Ship-to-shore communication must use **standardized message formats**.
- This ensures **efficiency, consistency, and ease of processing** by the office.

5.2.2 Message Group Numbering

- Every **telex message** must include:
  - **AA** – Two-letter vessel name identifier.
  - **XX** – Progressive message number (starting from 1st Jan each year).
  - **YY** – Current year.
- **Example:**
  - **DQ/24/06**
  - **DQ** = **Durban Queen**
  - **24** = **24th message sent from the vessel**
  - **06** = **Year 2006**

5.3 Daily Noon Reports

- **Masters must send a Noon Report daily at 1200 hrs SMT.**
- The report must include:
  - **LAT/LONG** (Vessel position).
  - **Speed, Average Speed, Distance Covered, Distance to Go, ETA**.
  - **Sea State, Wind Direction, Fuel & Lube Oil Remaining On Board (ROB)**.

Example Format:

yaml
CopyEdit
LAT/LONG: XXXXN / XXXXE
DEST/SPD: XXX / XX.X
AV SPD: XX.X
DIST COVRD: XXXX
DTG: XXXX
ETA: (XX/XXXX)

WIND DIRECTION: X / RH
FO ROB: XX.X
FO CONS: X.X

5.4 Arrival Report

- Sent **upon arrival at the pilot station, anchorage, or berth**.
- Must include:
  - **Local time of arrival**.
  - **Notice of Readiness (NOR) details**.
  - **Anchor drop details (if applicable)**.
  - **Pilot boarding time**.
  - **All fast time and bunker ROB status**.
  - **Delays (if any).**

5.5 Departure Report

- Sent **upon vessel's departure from the port**.
- Must include:
  - **Local time of all fast & pilot boarding**.
  - **NOR tendering and clearance received**.
  - **Cargo loading/discharge completion times**.
  - **Port clearance & cargo document status**.
  - **Bunker and lube oil ROB**.
  - **ETA at next port**.

5.6 Requirement Messages

- Any **requests from the vessel** must be sent as a separate message.
- **Urgent requests** must be marked with **"URGENT"** at the top of the message.

COMPLIANCE CHECKLIST – COMMUNICATIONS

✅ **Ship-to-Shore Messaging**
- Ensure **all SAT-C messages are concise and cost-effective**.
- Follow the **standardized message format** for easy processing.

✅ **Daily & Operational Reporting**
- Send **Noon Reports daily at 1200 hrs SMT**.
- Submit **Arrival and Departure Reports on time**.

✅ **Emergency & Urgent Communications**
- Follow up **all critical calls with a SAT-C message**.
- Mark **urgent requirement messages clearly**.

CHAPTER 06 – CODE OF PRACTICE FOR TOWAGE OPERATIONS

6.0 Introduction

This chapter outlines the **safe and efficient procedures for towage operations** involving **harbor, escort, and sea towage**.

The objective is to:

- **Ensure safety during tug operations.**
- **Define responsibilities of the vessel, Master, and tug operator.**
- **Standardize communication and emergency preparedness during towing.**

6.1 General Towage Guidelines

- Towage operations must be **conducted with pre-agreed plans between the vessel, pilot, and tug master**.
- The **Master remains responsible** for the safe execution of towage.
- Tug assistance must be **requested in sufficient time** to avoid unnecessary delays.

6.2 Responsibilities in Towage Operations

6.2.1 Responsibilities of the Vessel's Master

- The **Master must approve all towage operations** before execution.
- Ensure **crew readiness and deck equipment checks** before engaging a tug.
- **Communicate with the pilot and tug master** on maneuvering strategy.

6.2.2 Responsibilities of the Tug Master

- Maintain **clear communication with the vessel's bridge**.
- Ensure **towing equipment is in good condition** before engaging.
- **Adjust speed and position as required by the vessel's maneuvering needs**.

6.3 Towage Procedures

6.3.1 Tug Connection Procedures

- The **tug must approach the vessel's bow/stern safely**.
- **Heaving lines must be used to pass towing gear**.
- The crew must be alert for **snap-back zones when handling towing ropes**.

6.3.2 Towing in Harbors

- The pilot must **coordinate all movements between vessel and tug**.
- **Speed must be controlled** to prevent excessive strain on towing lines.
- If a tug is pushing alongside, **adequate fendering must be in place**.

6.3.3 Escort Towage

- Escort tugs must be in **constant communication with the bridge team**.
- **Passive Mode** – The tug remains in close attendance.
- **Active Mode** – The tug is made fast to assist in vessel maneuvering.

6.3.4 Towage in Open Waters

- **Ensure towing connections are secure** before proceeding into open waters.
- The towing vessel must maintain **a safe speed to avoid excessive loads on towlines**.
- A contingency plan for **towing failures must be in place**.

6.4 Emergency Procedures During Towage

6.4.1 Tug Failure

- If the **tug loses power or control**, the Master must:
  - **Stop or reduce speed immediately**.
  - **Use anchors if required** to prevent unintended movement.
  - **Maintain VHF contact with the tug master**.

6.4.2 Towline Failure

- If a **towline parts under strain**, the following actions must be taken:
  - **Inform the bridge and tug master immediately**.
  - **Deploy an emergency towline** if necessary.
  - **Reassess the maneuver and adjust vessel speed accordingly**.

6.4.3 Communication Failures

- If **VHF communication is lost**:
  - Use **pre-agreed hand signals**.
  - Switch to **backup communication channels**.
  - Cease maneuvering until safe communication is restored.

6.5 Hand Signals for Towage Operations

To ensure safe operations, the following **standard hand signals** must be used:

1. **Slack Off** – Outstretched arm waving downward.
2. **Let Go** – Sharp upward arm movement.
3. **Make Fast** – Crossed arms in front of the body.
4. **Heave Away** – Circular hand movement above the head.
5. **Stop** – Both hands raised above shoulders, palms forward.
6. **Slow Hoist** – Clenched fist repeatedly opened and closed.

6.6 Local Towage Operations

- **Local towage regulations must be followed** in every port.
- The vessel must have a **pre-approved towage plan for each port call**.
- The **Master and Pilot must review the port's tug assistance requirements** before maneuvering.

6.7 Additional References

Further guidance on towage operations can be found in:

- **Tug Use in Port: A Practical Guide – Nautical Institute**

- **OCIMF Recommendations for Ships' Fittings for Use with Tugs**
- **The Ship Handler's Guide – Nautical Institute**
- **Code of Safe Working Practices for Merchant Seafarers**
- **Relevant IMO and SOLAS regulations**

COMPLIANCE CHECKLIST – TOWAGE OPERATIONS

✅ **Pre-Towage Preparation**
- Verify **crew readiness and deck equipment checks before towing**.
- Ensure **clear communication between Master, Pilot, and Tug Master**.
- Conduct **pre-towage briefing with bridge and deck teams**.

✅ **Execution of Towage**
- Use **standard procedures for making fast and slackening towlines**.
- Maintain **controlled speed and avoid excessive strain on towlines**.
- Monitor **maneuvering adjustments based on tug positioning**.

✅ **Emergency Preparedness**
- Implement **emergency response plans for tug failure or towline parting**.
- Use **backup communication channels if VHF communication fails**.
- Ensure **all crew members understand and use standard hand signals**.

✅ **Local Compliance & Best Practices**
- Follow **local towage operation requirements**.
- Refer to **industry best practices and safety guidelines**.
- Review **towage performance after each operation for lessons learned**.

CHAPTER 07 – PREPARATION FOR DRY DOCK & CLASS OR CERTIFICATION SURVEYS

7.0 Introduction

This chapter provides **guidelines for the preparation of dry dock, classification, and statutory surveys**, ensuring:
- **Safe and efficient planning of ship repairs and maintenance**.
- **Compliance with classification society and statutory survey requirements**.
- **Proper coordination with dry dock facilities and surveyors**.

All shipboard personnel must be **familiar with dry docking procedures**.

7.1 Ship Repair Planning and Refit Specification

- Ship repair planning must start **well in advance** of the scheduled dry dock date.
- The **Chief Engineer must prepare a list of all required repairs** and submit it to the company.
- **A detailed refit specification must be documented** and approved by the Technical Superintendent.

7.2 Cleaning for Refit/Dry Docking

To ensure **safety and efficiency in dry dock**, the following **cleaning procedures must be carried out**:

7.2.1 Cleaning of Oil Fuel Compartments and Double Bottom Tanks

- Fuel tanks must be **completely drained, ventilated, and cleaned** before dry docking.
- Gas-free certification must be obtained **before any hot work is carried out**.
- Residues from oil fuel compartments must be **disposed of as per MARPOL regulations**.

7.3 Dry Docking Procedures

7.3.1 Safety Precautions

- A **safety briefing must be conducted for all crew members before dry docking**.
- The vessel must have **emergency exit routes clearly marked**.
- **Firefighting and emergency equipment must be operational** at all times.

7.3.2 Access to Ship

- **Safe gangways and ladders must be provided** for personnel access.
- Adequate **lighting must be arranged** inside and around the vessel.

7.3.3 Fire Precautions

- **Hot work permits must be obtained** before welding or cutting.
- **Fire watch personnel must be assigned** for continuous monitoring.

7.3.4 Theft Prevention

- **Restricted access must be enforced** in work areas.
- Valuable tools and equipment must be **securely stored**.

7.3.5 Responsibilities During Repairs

- The **Chief Engineer must oversee all repair work**.
- The **Master is responsible for ensuring compliance with safety protocols**.

7.3.6 Dry Dock Inspections and Repairs

- The following **inspections must be conducted before and during dry docking**:
    - **Hull inspection for structural damage and corrosion**.
    - **Propeller and rudder checks**.
    - **Underwater hull cleaning and painting**.

7.4 Classification Surveys

7.4.1 Principles of Classification

- The ship must undergo **periodic classification society surveys** to maintain class certification.
- All classification requirements must be **strictly adhered to**.

7.4.2 Statutory Surveys

- The following **mandatory statutory surveys must be conducted**:
    - **Annual Safety Equipment Survey**.
    - **International Load Line Survey**.
    - **MARPOL and SOLAS-related compliance checks**.

7.4.3 General Provisions Concerning Surveys

- **Surveyors must be given full access** to the ship for inspections.
- Survey certificates must be **kept on board for verification**.

7.4.4 Special Surveys

- **Conducted every five years** to assess the vessel's overall condition.
- Includes **thickness measurements of hull structures**.

7.4.5 Continuous Surveys

- Key machinery components **must be surveyed periodically instead of at fixed intervals**.

7.4.6 Annual Surveys

- Conducted to verify **general ship condition, safety equipment, and pollution prevention measures**.

7.5 Periodical Surveys

- Includes **bottom surveys, propeller shaft inspections, boiler surveys, and intermediate surveys**.
- Surveys must be scheduled **as per classification society and flag state regulations**.

7.6 Statutory Certificates & Documentation

7.6.1 Expiry, Discontinuance, Suspension, and Withdrawal of Class

- If the vessel **fails to meet class requirements**, classification can be:
  - **Suspended** until deficiencies are rectified.
  - **Withdrawn**, leading to the ship being out of service.

7.6.2 Administration Procedures & Definitions

- The ship must always have **valid statutory certificates onboard**.
- The following **certificates must be updated and renewed as required**:
  - **International Load Line Certificate**.
  - **Safety Equipment Certificate**.
  - **MARPOL-related certificates**.

7.6.3 Inspection by Government Authorities

- The ship may be subject to **Port State Control (PSC) inspections** at any time.
- Masters and Officers must be **prepared for random inspections**.

7.7 Key Items for Special Attention

The following areas **require close inspection during classification surveys**:

- **Hull structure and freeboard calculations**.
- **Safety construction certificate compliance**.
- **Machinery, chains, and wire rope inspections**.
- **Steering gear, emergency systems, and fire-fighting equipment**.

7.8 Dry Dock Finalization

- **All findings from dry dock must be documented**.

- **Surveyor reports must be submitted to the classification society and company**.
- The vessel must **only be cleared for departure after approval from the classification surveyor**.

COMPLIANCE CHECKLIST – DRY DOCK & CLASSIFICATION SURVEYS

✅ **Pre-Dry Dock Preparation**
- Ensure **all required repairs are listed and approved**.
- Verify that **fuel tanks are cleaned and gas-free certification is obtained**.
- Confirm **pre-docking inspections are completed**.

✅ **Safety & Fire Precautions**
- Conduct **safety briefings for crew before entering dry dock**.
- Ensure **firefighting equipment is operational and hot work permits are obtained**.
- Assign **fire watch personnel during welding and cutting operations**.

✅ **Survey & Inspection Compliance**
- Ensure **classification society surveys are scheduled and completed**.
- Maintain **valid certificates onboard for all statutory surveys**.
- Verify **hull, propeller, rudder, and structural integrity through inspection reports**.

✅ **Post-Dry Dock Procedures**
- Document **all repair work and inspection findings**.
- Obtain **final clearance from the classification surveyor before vessel departure**.
- Submit **surveyor reports to the company for record-keeping**.

CHAPTER 08 – BUNKERS, LUBE OILS, PROVISIONS, STORES, AND INVENTORIES

8.0 Introduction

This chapter defines the procedures for **bunkering, storing lubricating oils, handling provisions, managing stores, and maintaining inventories** onboard the vessel.

Objectives:
- **Ensure efficient and safe bunkering operations**.
- **Standardize procedures for receiving provisions and stores**.
- **Maintain accurate inventories to avoid shortages or wastage**.

8.1 Bunkers & Bunkering Policy

8.1.1 Bunker Procurement

- **Bunker quantity is determined by the Head Office**, in consultation with the **Master and Chief Engineer**, based on the vessel's trading pattern.
- The **Chief Engineer oversees the bunkering operation**.
- An **independent surveyor may attend bunkering operations**, as per **Head Office instructions**.

8.1.2 Bunker Sampling

- **For all bunker grades, samples must be drawn and retained onboard**.
- The **Head Office may request vessels to forward samples for testing**.
- **Proper labeling and storage of samples is mandatory**.

8.2 Bunkering Operations

8.2.1 Guidelines for Lifting Bunkers from Barges

- Conduct a **pre-bunkering survey** of all ship and barge tanks.
- **Ensure all bunkering connections are secured** before transfer.
- Monitor **bunker fuel quality and quantity** throughout the operation.

8.2.2 Safety & Pollution Control

- **Follow MARPOL Annex VI regulations** for bunker transfer operations.
- Keep **spill response equipment ready** at all times.
- Ensure **crew is briefed on emergency shutdown procedures**.

8.3 Lubricating Oils

8.3.1 General

- Lubricants must be **stored properly in designated areas**.
- The Chief Engineer must **monitor stock levels and consumption trends**.

8.3.2 Reception & Storage

- **All lubricating oils must be checked upon receipt** to confirm specifications.
- **Oil drums must be properly labeled and stored upright**.

8.3.3 Sampling During Reception

- Lubricant samples must be collected for **quality verification**.
- Samples must be retained for **a minimum of six months**.

8.4 Provision and Stores

8.4.1 Requisition Procedure

- The Master must **approve all requisitions before submission to the Head Office**.
- **Requisition forms must include detailed specifications of required items**.

8.4.2 Categories of Stores

- **Deck Stores:** Navigation aids, paints, ropes, life-saving appliances.
- **Engine/Electrical Stores:** Spare parts, maintenance tools, consumables.
- **Medical & Stationery Supplies:** First-aid kits, documentation materials.

8.4.3 Gas Cylinders

- Oxygen and acetylene cylinders must be **properly secured** at all times.
- Gas stores must be **inspected monthly** for leakage or damage.

8.5 General Notes

8.5.1 Procedures for Making Requisitions

- Stores requisitions must be submitted **15 days prior to each quarter**.
- Emergency requisitions will be **approved on a case-by-case basis**.

8.5.2 Supplier Terms & Conditions

- All **supplies must be pre-approved by the Head Office**.
- **Unauthorized purchases are strictly prohibited**.

8.5.3 Reception of Provisions & Stores

- Crew must **check all items for quality and quantity upon delivery**.
- Deficiencies must be **reported immediately**.

8.5.4 Signing of Delivery Receipts

- Delivery receipts must be signed **only after verification**.
- The **Master and Chief Officer are responsible for final approval**.

8.5.5 Safety in Refrigerated Spaces

- **Entry into refrigerated stores requires two-person supervision**.
- **Emergency escape procedures must be well understood** by all personnel.

8.5.6 Disposal of Unsuitable Provisions

- Expired provisions must be **disposed of as per MARPOL Annex V regulations**.
- **Records of disposal must be maintained onboard**.

8.5.7 Disposal of Useless Equipment & Stores

- Obsolete equipment and stores must be **reported to the Head Office** for disposal authorization.
- **Items must be marked as 'Non-Operational' before discarding**.

8.6 Inventories

- **A full inventory of bunkers, lubricants, provisions, and stores must be maintained** at all times.
- The Chief Officer and Chief Engineer must **conduct inventory checks every month**.

8.7 Addendum

- Any **revisions or additions** to bunkering, provisioning, or inventory policies will be issued by the **Head Office**.

COMPLIANCE CHECKLIST – BUNKERS, LUBE OILS, PROVISIONS & STORES

✅ **Bunkering Operations**

- Conduct **pre-bunkering surveys** and record initial fuel quantities.
- Ensure **proper sampling and labeling of bunker fuel**.
- Follow **MARPOL Annex VI pollution control measures**.

✅ **Lubricating Oils Management**

- Verify that **lubricants are stored correctly**.
- Perform **sampling and quality checks upon reception**.

- Maintain **updated lubrication oil inventory logs**.

✅ **Provisioning & Stores**

- Ensure **all requisitions are approved and documented**.
- Conduct **quality and quantity checks before signing delivery receipts**.
- Store **medical and refrigeration items under proper conditions**.

✅ **Inventory Management**

- Conduct **monthly inventory checks of bunkers, provisions, and stores**.
- Dispose of **expired or obsolete items as per regulations**.
- Maintain **updated stock records for all categories of stores**.

CHAPTER 09 – HEALTH AND MEDICAL PROCEDURES

9.0 Introduction

This chapter provides **guidelines for maintaining crew health, onboard medical procedures, and emergency medical response**. The goal is to:

- **Ensure the health and safety of all personnel onboard**.
- **Establish procedures for medical treatment and reporting**.
- **Comply with international maritime medical regulations**.

All **officers and crew must be familiar with medical procedures and first aid protocols**.

9.1 Health and Hygiene Practices

- **Personal hygiene must be maintained** at all times to prevent illness.
- **Crew members must undergo regular health checkups** as per company policy.
- Food handlers must comply with **safe food preparation and storage regulations**.

9.1.1 Preventing the Spread of Infectious Diseases

- **Isolation procedures** must be followed for any suspected infectious disease.
- **Sanitary conditions in living quarters, galley, and common areas must be ensured**.
- **Vaccinations must be up to date** as per WHO and Flag State regulations.

9.2 Medical Chest & First Aid Supplies

- The ship must carry **a fully stocked medical chest** as per the requirements of the **International Medical Guide for Ships (IMGS)**.
- Medical supplies must be **inspected and replenished periodically**.

9.2.1 Storage & Accessibility

- The **medical chest must be stored in a designated, easily accessible area**.
- **Controlled medications must be securely stored**, and access should be limited to authorized personnel.

9.2.2 Medical Inventory & Expiry Checks

- **Inventory must be checked monthly**, and expired medications must be replaced immediately.

- An **updated list of medical supplies must be maintained**.

9.3 Medical Officer & Responsibilities

- The **Master is responsible for ensuring medical care onboard**.
- A **designated crew member (Medical Officer) is responsible for first aid and medical procedures**.

9.3.1 First Aid Training

- **All officers and crew must undergo basic first aid training**.
- Regular **medical drills must be conducted** to ensure preparedness.

9.3.2 Maintaining Medical Records

- All **medical treatments onboard must be recorded** in the **Medical Logbook**.
- Records must be **kept confidential and made available only to authorized personnel**.

9.4 Medical Emergencies & Response Procedures

9.4.1 General Emergency Procedure

- In case of a **medical emergency**, the following steps must be taken:
    1. **Assess the situation and administer first aid**.
    2. **Inform the Master immediately**.
    3. **Contact shore-based medical support (Telemedical Assistance Service - TMAS) if required**.
    4. **Prepare for medical evacuation if necessary**.

9.4.2 Medical Evacuation Procedures

- If an injured crew member requires **evacuation**, the following procedures must be followed:
    - **Notify the nearest coastal authority**.
    - **Prepare the patient for transport** (ensure proper first aid is given).
    - **Arrange for helicopter/boat transfer in coordination with shore-based medical teams**.

9.5 Quarantine & Infectious Disease Protocols

- Any crew member suspected of **carrying a contagious disease must be isolated**.
- The **Master must notify port authorities** before arrival if an infectious case is suspected.
- **Disinfection of living quarters and common areas must be carried out**.

9.5.1 Personal Protective Equipment (PPE)

- **PPE (gloves, masks, sanitizers) must be available onboard** for handling infectious cases.
- **Crew must be trained on PPE use and disposal**.

9.6 Psychological Well-being & Mental Health

- The ship must maintain **a healthy work environment to reduce stress**.
- **Crew members must be encouraged to seek help for mental health concerns**.
- **Access to confidential counseling services** must be provided when possible.

9.7 Alcohol & Drug Policy Implementation

☑ Strict Prohibition: Unauthorized drug and alcohol use is strictly prohibited onboard at all times.

☑ Testing Schedule (as per company policy and VIQ 7 requirements):

- Shore-Based Drug & Alcohol (D&A) Testing: All crew members shall undergo a mandatory shore-based D&A test once per year through an independent testing agency.
- Monthly Random Onboard Alcohol Testing: The Master shall conduct random alcohol testing onboard once per month for all crew members.
- Fleet-Wide Random Alcohol Testing: The office shall initiate an unannounced, fleet-wide alcohol test once per year, ensuring all vessels in the fleet are subject to compliance checks.
- Random Drug Testing: Conducted at the company's discretion via an independent agency. Specimens must be forwarded for independent analysis, and results should be documented post any incident.

☑ Testing Authority & Procedure:

- The Master is responsible for conducting monthly random onboard alcohol tests. However, the Master shall also be tested under an independent mechanism to ensure fairness. This shall be complied by carrying out Random office-initiated Test for the vessel.
- Shore-based D&A testing will be handled by an independent testing authority, with reports forwarded to the company for compliance monitoring.
- The office-initiated fleet-wide alcohol test must be unannounced and carried out at least once a year across all vessels in the fleet.

☑ Record Keeping & Compliance:

- Maintain a log of all D&A tests conducted, including dates, personnel tested, and test results.
- Retain the records for at least two years for auditing and compliance verification.
- Ensure compliance with OCIMF Guidelines for the Control of Drugs and Alcohol and regulatory requirements.

☑ Incident Reporting:

- Any breach of drug or alcohol policies must be immediately reported to the Master.
- The Master must notify the Company for further disciplinary action, which may include dismissal and legal action as per flag state and company policies.

☑ Crew Awareness & Enforcement:

- Conduct regular briefings and training sessions on the implications of drug and alcohol use, including safety risks and regulatory consequences.
- Enforce a zero-tolerance policy, ensuring disciplinary action for any violations.

Summary of Testing Plan

Testing Type	Frequency	Initiated By	Conducted By
Shore-Based D&A Test	Once per year	Office	Independent Agency
Monthly Random Alcohol Test	Once per month per vessel	Master	Master (Random Crew Selection)
Monthly Random Alcohol Test	Once per month per vessel	Office	Master / Choff
Fleet-Wide Random Alcohol Test	Once per year	Office	Onboard crew
Random Drug Testing	At the company's discretion	Office	Independent Agency

COMPLIANCE CHECKLIST – HEALTH AND MEDICAL PROCEDURES

✅ **Health & Hygiene Standards**
- Ensure **crew follows personal hygiene and food safety regulations**.
- Conduct **regular health checkups and vaccinations**.

✅ **Medical Chest & First Aid**
- Maintain **fully stocked medical supplies** as per IMGS guidelines.
- Conduct **monthly inventory checks and replace expired medications**.

✅ **Medical Emergency Preparedness**
- Train **all crew members in first aid and emergency response**.
- Ensure **medical evacuation plans are in place**.

✅ **Quarantine & Disease Control**
- Isolate **crew members with suspected infectious diseases**.
- Notify **port authorities of any potential outbreak**.
- Maintain **adequate PPE supplies onboard**.

✅ **Mental Health & Drug/Alcohol Compliance**
- Promote **mental health awareness and stress management**.
- Conduct **random alcohol testing as per company policy**.

CHAPTER 10 – RECORDS & FILES

10.0 Introduction

This chapter outlines the **mandatory records and files** that must be **maintained onboard** to ensure:
- **Regulatory compliance** with Flag State, Class, Port State, and ISM Code.
- **Accurate documentation** of safety, security, and operational activities.
- **Efficient record-keeping for audits, inspections, and investigations**.

The following sections provide **a structured breakdown of the required files** to be maintained by key officers onboard.

10.1 Records Maintained by the Master

The Master must ensure the following **files are maintained at all times**:

Safety & Compliance

- **SQM 1** – Communication with **Flag State, Class, Port State & Oil Majors**.
- **SQM 2** – Various **Safety & Quality Management (SQM) Forms**.
- **SQM 3** – External Audit Reports.
- **SQM 4** – **Security File** (Maintained by CSO & Master).
- **SQM 5** – Safety Requisitions.
- **SQM 6** – **P&I and H&M Claims**.

Crew & Personnel

- **CRW 1** – Crew Details.
- **CRW 2** – Ship's Personnel: **Licenses & Medical Reports**.
- **CRW 3** – Provision Requisitions.

Financial & Operational

- **ACC 1** – Portage Bills.
- **BRIDGE 01** – Passage Plans.
- **BRIDGE 02** – **Bridge Emergency Checklists**.

10.2 Records Maintained by the Chief Engineer

The Chief Engineer must ensure the following files are maintained **for technical operations**:

Technical & Engineering

- **TECH 1** – Technical **Drawings, Manuals, and Bulletins**.
- **TECH 2** – Technical Reports.
- **TECH 3** – Dry Dock Reports.
- **TECH 4** – Defects, Follow-up & Spares Update.
- **TECH 5** – Shipments.
- **TECH 6** – Ship's Certificates.
- **TECH 7** – Enhanced Survey Program (ESP) File.

Procurement & Inventory

- **PURCH 2** – Engine, Electrical Stores, and Spares Requisitions.
- **ENGINE 01** – Service Register and Bunkering Plans.
- **ENGINE 02** – **Engine Emergency Checklists**.

10.3 Records Maintained by the Chief Officer

The Chief Officer must ensure the following **cargo and deck operation records** are maintained:

Procurement & Inventory

- **PURCH 1** – Purchase of Deck Stores & Spares.

Cargo & Deck Operations

- **CH 5** – Cargo Documents.
- **DECK 01** – Permits and Ballast Water Reports.
- **DECK 02** – Permit File.
- **DECK 03** – Cargo Loading & Discharging Plans.
- **DECK 04** – PMS

10.4 Additional Documentation & ISM Compliance

- The Master is authorized to **create additional records as required** for ISM implementation.
- **Any additional files must be approved by the SQ Manager** before implementation.
- Documentation must be **regularly updated and reviewed** to ensure **regulatory compliance**.

COMPLIANCE CHECKLIST – RECORDS & FILES

✅ **Master's Records**

- Maintain **safety compliance files (SQM, security, audits, and safety requisitions)**.
- Ensure **crew licensing, medical reports, and personnel records are updated**.
- Keep **accurate bridge logs, passage plans, and emergency checklists**.

✅ **Chief Engineer's Records**

- Maintain **technical manuals, drawings, and defect reports**.
- Ensure **proper documentation of bunkering and engine emergency checklists**.
- Keep track of **spares requisitions and follow-ups on shipments**.

✅ **Chief Officer's Records**

- Maintain **cargo-related documentation (loading, discharging, ballast water reports)**.
- Ensure **permits, deck operations, and purchasing records are kept up to date**.

✅ **General Compliance**

- Ensure **ISM documentation is reviewed and approved by the SQ Manager**.
- Keep all files **accessible for audits, inspections, and emergency reference**.
- **Update and archive records periodically** in compliance with company policies.