



**Asia-Pacific
Economic Cooperation**

Advancing Free Trade
for Asia-Pacific **Prosperity**

APEC Seafarers Excellence Network (APEC SEN) On-board Training to Foster Competent Young Future Maritime Global Leaders

APEC Transportation Working Group

March 2022



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Produced by
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1. Background

1.1. Relevance

Maritime transport plays an essential role in contributing to the world's economy, with over 90% of its trade conducted by sea. It is, by far, the most cost-effective way to move en masse goods and raw materials around the world. Furthermore, maritime activity plays a crucial role in alleviating extreme poverty and hunger. It offers a major source of income and employment for several developing economies (IMO, 2021), specifically in the Asia-Pacific region, such as the supply of seagoing personnel, operators, and port services.

This project aims to overcome one of the most critical and first hurdles to entering the global maritime industry as a qualified ship's officer or to meet the mandatory shipboard training requirements for cadets wishing to become ship's officers (e.g., students at universities and academies) (Note: To become an internationally qualified ship officer working for the international merchant fleet, one year of shipboard training is mandatory through the International Convention on Standards of Training, Certification, and Watchkeeping (STCW) of the International Maritime Organization (IMO)).

BIMCO survey results (ICS/BIMCO, 2015) revealed that more than 70 percent of maritime institutions reported having some amount of difficulty acquiring seagoing berths for officer cadets. In a recent ILO study (ILO, 2019), the organization described a shortage of cadet berths as a significant bottleneck in the supply of seafarers that has grown into a worldwide issue.

In this perspective, as part of APEC's major economic and technical cooperation pillar, this project aims to build the cross-border capacity of onboard training for each APEC member economy by actively co-utilizing and sharing relevant infrastructures and skilled human resources. This mutual cooperative and collaborative approach via this project to maximize physical, institutional, and people-to-people connectivity under APEC, will benefit all economies involved in tackling these issues and further seeks to make significant contributions in nurturing well-trained and qualified maritime manpower who will be crucial in the pivotal axis of operations in the APEC shipping industry. Therefore, the capacity of all stakeholders (e.g., maritime government administrations, MET institutions, and cadets) in structuring, operating, delivering, and participating in this project will be strengthened.

In this sense, the Secretary-General of the International Maritime Organization (IMO), Kitack Lim, has highlighted the importance of building the capacity of seafarers as a driving force for important

international transactions (Secretary-General Ki-tack, Lim, Our voyage together - IMO's history and future challenges in Association of Malaysia's Maritime Professionalism 2016).

“Today, more than ever, seafaring is a job that demands highly trained and qualified personnel. Modern ships are designed and built to the highest technical standards and require crew members with a high level of professional competence. To operate them safely and efficiently is a stimulating job in a truly hi-tech workplace...There is an immense investment in the training infrastructure that will undoubtedly help. Shipping companies also need to ensure they have properly structured training and career development programs in place. The importance of women as a future source of seagoing human resources cannot be overstressed. The shipping world cannot afford to ignore such a rich and still largely untapped source of quality recruits.”

In this perspective, this project suggests to include the significant contribution in achieving mandatory requirements of being a ‘highly trained and qualified personnel’ through the utilization of a training ship, which requires “an immense investment in (terms of) the training infrastructure,” fully supported by APEC member economies.

1.2. Objective

As part of APEC’s major economic and technical cooperation pillar, this project originally aimed upon 1) developing APEC SEN onboard training system that is compatible, easily accessible, and qualifiable to all APEC relevant members and 2) building the cross-border capacity of onboard training for each APEC member economy by actively co-utilizing and sharing relevant infrastructures and skilled manpower. As for the outbreak of COVID-19, the latter aim was not able to be met; however, the first aim has been fully met by developing a curriculum and training-supporting materials. To achieve this, NTOU¹ - APEC SEN Workshop on On-board Training to Foster Competent Young Future Maritime Global Leaders (August 11, 2021) was conducted with the support of the APEC SEN Secretariat.

The target participants of the meetings mentioned above and workshops were: government officers who are in charge of maritime education and training (e.g., Ministry of Human Resource Development, National Coast Guard) and of seafarers’ policy (e.g., Seafarers’ Policy Division); academic experts working in maritime domain (e.g., maritime universities, and training institutions); and industry experts directly or indirectly engaged in the operation of vessels and management of the onboard personnel (e.g., shipping companies, and crewing agencies).

¹ National Taiwan Ocean University

In developing the onboard training program, this project tries to take a holistic approach from training to recruitment by encompassing wider views from a range of expert groups from governments to industry, who provides education, training, recruitment services by nurturing cadets. A series of meetings and workshops conducted from April 2020 to August 2021 revealed a wide spectrum of issues under the onboard Training, including training program, participants, and future directions, as illustrated below.

- **Operation scheme of APEC SEN onboard training**
 - Utilization of training vessels
 - Sharing of berthing ports
 - Exchange of human resources (e.g., faculty members and program operators)
 - Students' selection criteria (educational background, gender ratio, etc.)
 - Number of participating cadets per year
 - APEC SEN onboard training schedule
 - Possible voyage plan
 - Duration of onboard training
 - Inclusion of safety training for onboard training under STCW
 - Collaboration of project with non-APEC bodies (e.g., IMO and ILO)
 - Funding issues

- **Establishment of onboard training curriculum and materials**
 - International standards
 - Training elements and extra-curricular activities
 - Training curriculums equivalent to three months
 - Certification and endorsement of sea time occurred from the onboard training program

- **Miscellaneous**
 - Students' vaccination requirements
 - Visa application
 - Designation of focal points of each economy

2. The Summary of Meetings

NTOU - APEC SEN Workshop on On-board Training to Foster Competent Young Future Maritime Global Leaders (August 11, 2021)

The APEC SEN-NTOU Workshop on Onboard Training to Foster Competent Young

Future Maritime Global Leaders was held virtually on August 11, 2021, with 73 participants from 14 APEC member and non-member economies. The discussion meticulously encompassed the comprehensive spectrum of necessary aspects to be taken into account for the successful implementation of the onboard training programs. The discussions were made under the leadership of Expert Group 1 Chair (Dr.) Jinsoo Park from the Republic of Korea and the APEC SEN Project Manager Mr. Jin ki Seor.

- The workshop commenced with the opening addresses of the NTOU President Tai-Wen Hsu, congratulatory remarks from APEC SEN Secretary-General Dong-Jae Lee. Then, Dr. Jinsoo Park commenced the discussion session by delivering his opening remarks.
- APEC SEN Project Manager Mr. Jin ki Seor initiated the discussion by sharing a “Project Updates APEC SEN Onboard Training presentation.” The key details of the presentation are as follows:
 - The project “TPT 03 2019: An Onboard Training to Foster Competent Young Future Maritime Global Leaders” incorporates three interconnected perspectives to create a synergy as below:
 - i. IMO TC Onboard Training funded by Korean ITCP (Integrated Technical Cooperation) donation
 - ii. APEC SEN Onboard Training Program (three-month duration)
 - iii. ODA (Official Development Assistance) Onboard Training Program funded by the Republic of Korea
 - All physical engagements in APEC SEN Onboard Training have been canceled due to the ongoing impacts of the COVID-19 pandemic. Meanwhile, IMO TC and ODA Onboard Training Programs are expected to commence starting from 2021.
 - This project consists of three phases: research, workshop, and pilot training. The research phase has been progressed as below:
 - i. Research I: Research has been conducted to collect data from the maritime academies and maritime education of the APEC member economies in the perspectives of seafarers and shipping companies regarding the

qualification system of seafarers, which varies from economy to economy.

ii. Research II: The three-month onboard training curriculum was contributed by the KIMFT. The well-structured training curriculum applies to various ship operations such as ship navigation, berthing, and more.

iii. Research III: Development of On-board Training Record Book for deck cadets and engine cadets. The draft of Onboard Training Record Books was circulated to member economies in December 2020 for review and has been modified. The training materials for onboard training programs include APEC SEN Maritime Basic Safety Training, Onboard Familiarization, and Drill.

- It was strongly advocated that the cooperative involvement of maritime institutes, maritime administration, and shipping companies as cadets will mandatorily require endorsements for their seafaring experiences following the completion of their onboard training period.
- In continuation of the project update, Dr. Edward Wen Jen Wu, the Principal Surveyor of DNV, continued the discussion session by presenting upon “Shipboard Training-Ashore Support.” The key details are as follows:
 - Empirical analysis suggests that socialization, including training, understanding, and high internship satisfaction, contributes to higher seafaring commitment.
 - STCW Regulation I/6 stipulates that the training and assessment of seafarers are administered, supervised, and monitored in accordance with the provisions of Section A-I/6 of the Code. This requires the assessor to know the STCW competence table, including limitations, restrictions, and instructions.
 - The ISM Code Chapter 6, “Resources and Personnel, in particular 6.3-6.5, provides a regulatory framework for shipping companies to promote a well-systematized onboard training course for cadets at the management level.
 - In regard to the above, three related IMO Model Courses can be of good reference in developing onboard training criteria:
 - i. Onboard Assessment - 10 lecture hours, six practice hours

- ii. Assessment, Examination, and Certification of Seafarers - 72 hours
- iii. Training Course for Instructors - 24 lecture hours, 36 practice hours
- The presentation concluded with the following recommendations for onboard training systems ashore:

For Administration

- i. Promulgate flag’s provisions about shipboard training, assessment, and supervision involving Company’s responsibilities as per STCW and International Safety Management (ISM) Code.
- ii. Facilitate and/or delegate instructor, assessor, and supervisor training program (model courses).
- iii. Ensure companies follow STCW and flag’s provisions under Safety Management System (issue instruction to ISM R.O.).
- iv. Ensure Training Record Book (TRB) endorsed by the authorized personnel to validate CoC.

For Companies

- i. Identify Company focused seafarer competency and mapping to TRB.
- ii. Document shipboard and ashore training and assessment procedures/ materials/assignment under SMS to empower shipboard management
- iii. Qualify Training Officers (instructor, assessor, and supervisor) aboard and ashore as per flag’s provisions and SMS procedure.
- After this presentation, the discussion within APEC member economies largely focused on special training requirements for various ships. Although there is currently no specific onboard training record book for certain types of ships, there would be significant value in developing a single onboard training record book that provides training across different types of ships to ensure all cadets have access to appropriate levels of training while onboard.
- Furthermore, Dr. Jiunn-Laing Guo, the Professor of the Department of Merchant Marine of NTOU, continued the discussion session by presenting “On-Board

Training for Female Cadets.” The key details are as follows:

- According to the latest manpower report from the International Chamber of Shipping (ICS/BIMCO, 2015), an estimated 1.28% of women make up the total global maritime workforce, with predominant representation in the cruise ship and passenger ferry sectors. Female deck officers and engineers represent relatively smaller cargo ships, constituting 0.12% of the seafaring population.
 - The International Maritime Organization (IMO) and the United Nations (UN) have respectively initiated several campaigns (e.g., UN SDG 5, IMO Women in Maritime Programme) to enhance female representation in the sector. Due to the efforts of the International Labour Organization, the Maritime Labour Convention (MLC) now includes specific requirements to ensure the conditions of shipboard facilities for women.
 - Despite efforts to improve access to maritime education for women, there continues to be a significant gap between the education and employment of women seafarers. At the end of 2020, there were only 219 Chinese Taipei women seafarers onboard ships, compared to 6380 men.
 - Research has shown that though women possess maritime education, they still face barriers, particularly masculine norms and values typically reflected in onboard ships' work culture. An excerpt from the Women's Studies International Forum states that “acceptance of women in Chinese Taipei's shipping industry is still limited, and even today, few shipping companies are willing to employ women seafarers.”
 - Recruitment of women can positively influence the market mechanism in the face of a potential labor shortage of officers.
 - The presentation concluded that reducing bias against women, in general, would directly impact the perception and acceptance of women seafarers on board. The suggestion was that integrating women into seafaring jobs is a long way for the industry.
- Moreover, Capt. Anwar Buftain continued the discussion session by presenting “APEC Wide Onboard Training and Education.” The key details are as follows:

- The project's objectives were given as below:
 - i. APEC young maritime leaders are expected to have high cross-cultural awareness, global leadership, and communication capabilities.
 - ii. The 'APEC-wide On-Board Training Curriculum' is developed through the following three activities: research, expert meetings, and workshop.
 - iii. To standardize onboard training materials among APEC-SEN member economies.
- The onboard training record books and textbooks were outlined as the two key deliverables. Both aim to be designed to identify the training requirements necessary to adhere to within the training period for officers in charge of both the navigational watch (deck cadets) and engineering watch (engine cadets).
- The APEC SEN onboard training record books were developed based on the highest standards of maritime industry guidelines and regulations that rely on competence requirements of the STCW Convention 2010, International Guidelines issued by maritime associations and councils (e.g., ICS, Intertanko, Intercargo, BIMCO, OCIMF, and SIGTTO), best practices of major shipping companies, specific training requirements based on flag states, and more.
- The APEC SEN Onboard Training Record Book contents have a meticulous selection methodology to determine their content and structure. They will be designed carefully to fulfill the mandatory requirements.
- The desired outcomes of the onboard training project have the objective of harmonizing international seafarer standards and knowledge in a manner both comprehensive yet accessible to non-native English speakers.
- Moreover, Mr. Gregory Stitz from the US Maritime Administration (MARAD) continued the discussion session by presenting upon "National Security Multi-Mission Vessel (NSMV) Program." The key details are as follows:
 - The US government is producing a fleet of NSMV's programs, which serves multi-purposes for maritime education training, logistical support, domestic-international disaster relief, and other state-sponsored missions.
 - Several of the training ships currently used by these schools are approaching

the end of their useful lives. In addition to the rapidly-increasing maintenance costs, some of these vessels are steam-powered. Therefore, the fuel they use and their emissions no longer meet stringent environmental regulations. This, in turn, impacts training, the ship's voyage plans and greatly limits training opportunities for the cadets aboard.

- NSMVs are not only designed to meet the needs of emission requirements around the world (air, ballast, and wastewater), but they will succeed in future imposed environmental standards.
 - The project timeline was briefly outlined, starting in 2015 with two rounds of state funding, concluding to date with the construction of the 2nd vessel, with the first two NSMVs projected to be delivered in 2023.
 - If funded, the ships will be produced in a privately-owned, commercial shipyard in Philadelphia. The first two NSMVs will replace training ships Empire State and Kennedy, the two oldest vessels in America's training ship fleet.
- Last but not least, Mr. Milhar Fuazudeen continued the discussion session by presenting upon "APEC SEN Workshop for Onboard Training Programme Design, Onboard Training of Seafarers." The key details are as follows:
 - While Article 6.09 is not entirely obsolete, it still needs revamping, and the appropriate time for doing so would be following the subsequent amendments of the STCW Convention.
 - The framework standard contains Tables of Competence in STCW Code, about the content of the training record books for both deck cadets (STCW-7/Circ.2) and engine cadets (STCW-7/Circ.3), as well as IMO Model Course 1.30 Onboard Assessment, which may be considered obsolete presently. At present, The STCW 2010 provides the most applicable framework standard, and there is no better alternative for the STCW 2010 code. However, as IMO firmly recommends the Conventions and Codes go under review for periodic comprehensive revisions in a 10-year cycle, the comprehensive review of the STCW is in its commencement stage.

- Onboard training presents an opportunity for cadets to achieve required competencies by gaining invaluable hands-on experience with actual shipboard equipment and having opportunities to compare knowledge and test skills acquired ashore with onboard practice. Besides, cadets can be mentored and tutored under supervision by qualified seafarers. Providing mentoring to cadets is the key to attaining competent and efficient seafarers in the future.
- Onboard training should be closely supervised and monitored by experienced, qualified serving officers and provided by designated onboard training officers, documented in a training record book, and signed off by the Master/Chief Engineer and designated training officer. It will also be authenticated by the Company and Maritime Education and Training (MET) provider and verified by the Maritime Administration.
- The APEC SEN Onboard Training Record Book covers the following points:
 - i. Structured in alignment with Tables of Competence
 - ii. Provides a framework for planning approved training
 - iii. Specifies assignments in less or greater detail
 - iv. Required only for the first certificate of competency (operational level)
 - Regulation II/1: Navigation Department
 - Regulation III/1: Engine Department
- The onboard training record book outlines the practical training to be completed before certification as Officer in Charge of a Watch. Aside from its intended use for recording onboard training completion, it is also an excellent toolkit for administration, Maritime Education and Training (MET) providers, trainers, assessors, and cadets in efficiently providing practical onboard training. The onboard training record book must serve as reliable documentary evidence of competence and provide sufficient guidance and opportunity for the cadets to develop competence.
- Shipping companies must jointly develop the training program with MET providers as part of training approved by the administration. This is critical so that the program provides cadets with the opportunity to provide verifiable evidence for their training within the guidelines of the STCW Code.

- Some tasks may not be possible to complete only onboard one ship, and they may require training onboard multiple ships to complete. The training standards must be comparable but ideally consistent from vessel to vessel.
- While simulations are valuable for building the basis of a training exercise, the hands-on exercises in real are more valid for building foundational skills. Caveats of multinational crews include a mutual lack of cultural awareness, language awareness, and behavioral patterns. Cultural competence training must be included in the ship familiarization training through a more holistic training regime.
- The onboard record book satisfies its requirements, but its minimum standards are almost inseparable from the industry standards. Industry standards are guidelines, whereas STCW standards are mandatory minimum standards. Any training provided above and beyond the STCW minimum is advantageous to seafarers from member economies. The shortage of almost 89,000 officers (ICS/BIMCO, 2015) is a catch-22 problem caused by a lack of training berths.
- After developing the onboard training record book, the initial step should be to accept the member economies before attempting iterations. A single, universal onboard record book applicable to seafarers of multiple disciplines would ultimately be more pragmatic and practical.

3. International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers (STCW)

3.1. The Purpose of STCW

The International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers (STCW) 1978, as amended in 1995 and again in 2010, prescribes the required minimum standards regarding seafarers' education, certification, and watchkeeping in detail. In this Convention, minimum standards relating to training, certification, and watchkeeping for seafarers are prescribed, which economies are obliged to meet or exceed.

The STCW was first established outlining basic requirements on training, certification, and watchkeeping for seafarers at an international level and adopted by the International Maritime Organization (IMO) in 1978 and came into force in 1984. Previously, ratings had been

established by individual maritime administrations of each economy without considering other international norms/regulations. For this reason, standards and procedures were quite different from economy to the economy at that time, even in the fact that shipping was one of the biggest international industries around the world.

In the late 1980s, a considerable concern of the STCW-78 was raised, claiming that its initial purpose of elevating the standards of professionalism of the maritime workforce was not sufficiently fulfilled, which gave rise to the high demand for amendments. Against this background, the first revision of the STCW Convention was undertaken in 1995 and entered into force on February 1, 1997. One of the critical features of the revision was to divide the technical annex into regulations with Part A of the Code (mandatory) and Part B (recommended) to assist administration easier in procedural and legal perspectives and make the future revisions and updates simpler.

Followed by a second revision, “STCW 2010 Manila Amendments” were made in alignment with the constant shifting industry development. At present, therefore, STCW 2010 represents the most current revision of the STCW Convention and is comprised as follows:

- **PART A:** Mandatory minimum standards of training, certification, and watchkeeping that must be maintained.
 - **Chapter I: General provisions**
A broad spectrum of administrative and procedural matters affecting the interpretation and application of the technical requirements in the remaining seven chapters
 - **Chapter II: Master and deck department**
The requirements for the master and officers and ratings serving in the deck area and/or performing functions related to navigation, cargo handling and storage, and control of ship operations and care of persons on board
 - **Chapter III: Engine department**
The requirements for officers and ratings serving in the engine department and/or performing functions in the areas of marine engineering, electrical engineering, electronics, and control engineering, maintenance, and repair, and control of ship operations and care of persons on board

- **Chapter IV: Radiocommunication and radio personnel**
The qualifications for radio operators and those who perform radio duties on seagoing ships relating to the function of radio communications
 - **Chapter V: Special training requirements for personnel on certain types of ships**
Qualifications for (a) personnel on tankers and (b) personnel on ro-ro passenger ships.
 - **Chapter VI: Emergency, occupational safety, medical care, and survival functions**
The requirements, including (a) familiarization and basic safety training, (b) proficiency in survival craft, (c) training in advanced firefighting, and (d) medical care
 - **Chapter VII: Alternative certification**
Allowing STCW certificates to be issued based on an alignment of the seven functions and three levels of responsibility with an alignment or structure that differs from that of Chapters II (Deck Section) and III (Machinery Section)
 - **Chapter VIII: Watchkeeping**
Consolidation of material relating to watchkeeping arrangements to ensure that an effective watch is maintained on all seagoing ships by qualified and fit personnel under all circumstances
- **PART B:** Recommended guidance on seafarers' training, certification, and watchkeeping to assist parties in the implementation of the STCW Convention

The STCW Convention applies to all seafarers serving on commercial vessels engaged in domestic or international voyages but does not include any warships, naval auxiliaries, or other government-owned or operated ships engaged in non-commercial service, fishing vessels, pleasure yachts not engaged in trade and primitive wooden ships. Therefore, in the APEC SEN Onboard Training Program, the focus will be made on the cadets wishing to be marine officers engaged in deck and engine departments of ocean-going commercial vessels by covering the mandatory Part A of the STCW Convention is required to acquire the relevant qualification. The details are illustrated in the following section.

3.2. Minimum Standards for Officers at the Entry Level

3.2.1. Requirements for Deck Officers

General requirements to obtain a Certificate of Competency (CoC) as an officer in charge of a navigational watch on ships of 500 gross tonnages or more are as follows:

- **Education and training:** an approved training course to be completed and the competency requirements outlined in Section A-II/1 of the STCW Code to be met
- **Seagoing service:** at least one year of supported seagoing service as part of an approved preparation program, which meets the requirements of Section A-II/1 of the STCW Code recorded in a supported preparation book
- **Bridge watch duty:** bridge watch duty under the supervision of the master or a competent officer to be completed for at least six months during the prescribed seagoing period
- **Radio Service:** the applicable requirements of the rules in Chapter IV (GMDSS) to be met for the conduct of the designated radio service in accordance with the Radio Service Enforcement Regulations

3.2.2. Requirements for Engineers

General requirements to obtain a CoC as an officer in charge of an engineering watch in a manned engine room or designated duty engineers in a periodically unmanned engine room (750 kW propulsion power or more) are as follows:

- **Education and Training:** approved education and training to be completed and the standards of competence specified in section A-III/1 of the STCW Code to be met
- **Seagoing service:** at least 12 months of combined workshop skills and approved seagoing service, of which at least 6 months must be seagoing service in an approved training program; or at least 36 months of combined shop training and approved seagoing service, of which at least 30 months must be seagoing service in the engine department, which is to be documented in an approved training log.
- **Engine room watchkeeping:** under the supervision of the chief engineer or a

qualified engineer officer for not less than six months during the required seagoing service

4. APEC SEN Onboard Training Program

4.1. Curriculum

The training curriculums of APEC SEN Onboard Training Program were developed with a strong initiation and dedication of Korea Institute of Maritime and Fisheries Technology (KIMFT) under the Ministry of Oceans and Fisheries, Republic of Korea. KIMFT is a government organization in charge of seafarers' affairs, including seafarers' maritime education and training (MET), issuing certificates, quality assurance for Korean MET since its foundation in 1965. Currently, KIMFT owns and operates four specialized training vessels for fostering cadets with experiences of around 30 years. With the accumulated knowledge and experiences in cadet education and training via different training ships (i.e., merchant and fishery), KIMFT generously donated their expertise to organize a three-month onboard training curriculum with well-qualified professors and instructors course designers in compliance with IMO STCW conventions. The training curriculum has been reviewed by expert groups of APEC SEN in a series of meetings and workshops, endorsed and currently ready for implementation.

Particular attention to be made at this point is that unlike general cadetship programs with one year of onboard training on a commercial shipping line, APEC SEN Onboard Training Program is based on the operation of the dedicated training ship sponsored by APEC member economies that own their training ships (e.g., People's Republic of China; the Republic of Korea; Chinese Taipei; United States if applicable) for three months in consideration of linking the program with onboard training in an associated merchant training ship (a partnership to be made in the future). Therefore, this curriculum considers the training schedule of the training vessels, such as leaving ports, navigating at sea, anchoring, taking pilots, berthing, and mooring. In every stage of the operation, therefore, specific training elements need to be harmoniously allocated by considering the nature of the activity (e.g., either theory or practice) to maximize the effectiveness of the training. In this perspective, this curriculum reflects the needs of onshore and offshore activities required throughout the navigation under the STCW conventions and further accommodates the views from MET course designers, industry experts, and government policymakers through meetings and workshops. The details of the three-month onboard

training curriculum are attached in Appendix 1.

4.2. Onboard Training Record Books

4.2.1. Deck Cadets

The APEC SEN Onboard Training Record Book (for the deck department) carefully considers STCW 2010 and subsequent amendments to the 1978 STCW Convention, as amended, in the current standards for deck cadets, including additional competencies for industry guidelines issued by several shipping associations and councils, best practices of major shipping companies, flag state requirements in addition to those of the 1978 STCW Convention, as amended, relating to leadership, teamwork skills, and constructive measures to protect the maritime environment.

The updates included in this record book focus on cadets' ability to discharge their duties competently and achieve the highest competency standards in the different maritime skills needed to serve as a watchkeeping officer onboard upon obtaining the certificate of competency. The STCW Convention, 1978, as amended, requires the documentation of onboard training of cadets within a structured training program in a training record book as documentary evidence of completion of, and compliance with, an approved structured training program, in addition to any industry requirements of guidelines issued by industry organizations in addition to requirements of the STCW Convention, 1978, as amended.

The tasks in the book have been specifically planned to ensure that trainees follow the qualification criteria for the competencies set out in the STCW Code and that the onboard training officers monitoring their performance use appraisal criteria based on the STCW Code. The tasks are also planned to make sure that trainees make the most practicable use of their seagoing service and enable trainees' onboard supervisors to accurately determine trainees' performance. Although the tasks were planned to consider that it is onboard training, in certain cases, the tasks and the related requirements are discussed in greater depth than in the STCW Code.

Note that obtaining the certificate of competency of a watchkeeping nautical officer on ships

of 500 gross tonnage and above does not require completing this training record only. Nevertheless, the completion of the Onboard Training Record Book should contain detailed information to provide documentary evidence that the trainee has undergone on-board training within a structured training program and demonstrated knowledge, understanding, and proficiency of all the competencies required by the STCW Code. That delivery of the record to the competent authority does not in itself constitute an official evaluation of the trainee's competency.

The table of contents of APEC SEN Onboard Training Record Books for Deck Cadets are as follows, and details are included in Appendix 2.

Section 1: Methodology

- Completion guide

Section 2: Progress Record

- Cadet's personal information
- Training programmes
- Basic training as required by section A-V1/1 paragraph 2 of the STCW code
- Other training programmes
- Shipboard sea time record of service
- Appointed training officer's review of cadet training progress
- Master's monthly inspection of record book
- Company's inspection of record book
- List of computer-based training programmes, publications, or video studied/used

Section 3: Compulsory Safety and Shipboard Familiarization

Section 4: Ship's Particulars

Section 5: International Regulations for Preventing Collisions at Sea, 1972

Section 6: Information on Training Tasks and Competences to be Achieved

- Competences for officers in charge of a navigational watch (STCW Code Table A-II/1)
- Example of how to complete the list of training tasks and competencies achieved

Section 7: tasks for officers in charge of a navigational watch

- Function: navigation at the operational level
- Function: cargo handling and stowage at the operational level

- Function: security in compliance with Sections A-VI/5 and A -VI/6
- Function: cargo handling and stowage – additional tasks for tankers – Section A -V/1
- Function: controlling the operation of the ship and care for persons on board at the operational level

Section 8: Cadet Steering Certificate

Section 9: Project Work

Section 10: Task Summary Chart

4.2.2. Engine Cadets

In addition to the 4.2.1., The table of contents of APEC SEN Onboard Training Record Books for Engine Cadets are as follows, and details are included in Appendix 3.

Section 1: Methodology

- Completion guide

Section 2: Progress Record

- Cadet's personal information
- Training programs
- Basic training as required by Section A-V1/1 Paragraph 2 of the STCW code
- Shipboard sea time record of service
- Appointed training officer's review of cadet training progress
- Chief engineer's monthly inspection of record book
- Company's inspection of record book
- List of computer-based training programmes, publications, or video studied/used

Section 3: Compulsory Safety and Shipboard Familiarization

- Safety familiarization as required by Section A-V1/1 Paragraph 1 of the STCW code
- Familiarise the shipboard as required by regulation 1/14 of the STCW convention

Section 4: Ships Particulars

Section 5: Safety at Work

Section 6: Information on Training Tasks and Competences to be Achieved

- Competences for officers in charge of an engineering watch (STCW Code)
- Example of how to complete the list of training tasks and competencies achieved

Section 7: Tasks for Officers in Charge of an Engineering Watch

- Function: marine engineering at the operational level
- Function: electrical, electronic and control engineering at the operational level
- Function: maintenance and repair at the operational level
- Function: controlling the operation of the ship and care for persons on board at the operational level
- Function: security in compliance with Section A-VI/6

Section 8: Project Work

Reference

Baltic and International Maritime Council & International Chamber of Shipping (2015). Manpower Report: The Global Supply and Demand for Seafarers in 2015, Marisec Publications: London.

International Maritime Organization (2010). International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, IMO: London.

International Maritime Organization (2021). Integrated Technical Cooperation Programme, Retrieved from <https://www.imo.org/en/OurWork/TechnicalCooperation/Pages/ITCP.aspx>

International Labour Organization (2019). Recruitment and Retention of Seafarers and the Promotion of Opportunities for Women Seafarers.

Appendix 1 Three-month Onboard Training Curriculum

APEC SEN On-board Training Program

The following program is under the relevant IMO Model Courses (7.03 & 7.04) in accordance with STCW Code for the period of three months.

SECTION A: Overview for the three months Onboard Training Program

Date Week	Mon	Tue	Wed	Thu	Fri	Hours
1 st	Basic Safety Training (Shore)			Familiarization/Drill (Ship)		34
	6(hours)	6	6	8	8	
2 nd	In Port*					
	7	7	7	7	7	35
3 rd	At sea		In Port	At sea		38
	8	8	6	8	8	
4 th	In Port					
	7	7	7	7	7	35
5 th	At sea		In Port	At sea		38
	8	8	6	8	8	
6 th	In Port					
	7	7	7	7	7	35
7 th	At sea		In Port	At sea		38
	8	8	6	8	8	
8 th	In Port					
	7	7	7	7	7	35
9 th	At sea		In Port	At sea		38
	8	8	6	8	8	
10 th	In Port					
	7	7	7	7	7	35
11 th	At sea		In Port	At sea		38
	8	8	6	8	8	
12 th	In Port					
	7	7	7	7	3	31
Total Hours						430

* The places listed in the table are provisional as a reference.

SECTION B: Common program for on-board training for week #1

The following program consists of basic safety training and familiarization training for the embarkation on the training ship for the first week of the period.

a. Basic Safety Training under STCW Code A-VI

Course outline	Hours	
1st Day		
Training facilities safety and ship familiarity	1h	
1. Introduction, course outline and STCW convention 2. Trainee, SELF-introduction 3. Introduction, safety and principles		
Personal safety and social responsibilities		
1. Human relationships on board ship Team building and work 2. Knowledge, understanding and proficiency General arrangement, Fire control & Life-saving plan, 3. IMO SYMBOL, PPE etc. Drill and operational readiness 4. Drill and muster Explains the term 'emergency' Internal communication Value and need of drills and training	2h	
LUNCH BREAK		
Life boat and rescue boat	3h	
1. Launching arrangements 2. Lifeboat davit arrangement & launching outline 3. Life raft arrangement & launching outline 4. Operation of life boats & life rafts		
2nd Day		
Proficiency in personal survival techniques		
1. Don a life jacket and immersion suit 2. Safely jump from height into the water 3. Swim while wearing a life jacket 4. Keep afloat life jacket and immersion suit	3h	
LUNCH BREAK		
Fire prevention and fire-fighting (small fire)	3h	
1. Fire prevention principles 2. Communications 3. Fire and smoke detection system 4. Use of portable extinguisher, fire-blankets etc.		

3rd Day	
Fire prevention and fire-fighting (large fire)	3h
1. Fire prevention principles	
2. Communications	
3. Don a fireman's outfit	
4. Operation of fixed installations (smothering, inhibitor, cooling)	
MEAL BREAK	
Medical first aid	3h
1. The ABCS Come first	
2. Method of AED	
Sub Total	18

b. Familiarization Training and Safety Drills

Course outline	Hours
4th Day	
Safety Familiarization	4h
1. Fire-fighting	
2. Safety equipment	
LUNCH BREAK	
Ship-board familiarization	4h
1. Ship particular	
2. Organization	
3. Duty	
4. GA	
5th Day	
Ship-board familiarization	4h
1. Bridge	
2. Engine room machinery	
3. Cargo system	
LUNCH BREAK	
Safety familiarization	4h
1. Ship emergency response drill	
Sub Total	16
Grand Total	34

SECTION C: Detailed Onboard Training Program for Deck Officer

(STCW code A-II/1, Model course 7.03)

Function	Knowledge, understanding and proficiency	Hours
Navigation Equipment	1.1 CELESTIAL NAVIGATION	18
	1.1.1 Solar system	
	1.1.2 Celestial sphere and equinoctial system of coordinates	
	1.1.3. Hour angle	
	1.1.4 Sextant and altitude corrections	
	1.1.5 Amplitude	
	1.1.6 Time and equation of time	
	1.1.7 Nautical almanac	
	1.1.8 Position fixing	
	1.2 ECHO-SOUNDERS	2
	1.2.1 Echo-sounders	
	1.3 COMPASS – MAGNETIC AND GYRO	16
	1.3.1 Magnetism of the earth and the ship's deviation	
	1.3.2 Magnetic compass	
	1.3.3 Gyrocompass	
	1.3.4 Errors of the compass and azimuths	
	1.4 STEERING CONTROL SYSTEMS	6
1.4.1 Steering control systems		
1.5 USE OF ECDIS TO MAINTAIN SAFETY OF NAVIGATION (See IMO model course 1.27)	8	
Sub Total		50
Terrestrial and Coastal Navigation	2.1 TERRESTRIAL AND COASTAL NAVIGATION	48
	2.1.1 Charts	
	2.1.2 Electronic charts	
	2.1.3 Datums	
	2.1.4 Distances	
	2.1.5 Position lines and positions	
	2.1.6 Sailings	
	2.1.7 Chartwork exercises	
	2.1.8 Information from charts, lists of lights and other publications	
	2.1.9 IALA Buoyage System	
	2.1.10 Tides	
	2.1.11 Keeping a log	
	2.2 THE USE OF ROUTEING	8
	2.2.1 Weather routing	
	2.2.2 Use of routeing in accordance with general provisions on ships' routeing	
Sub Total		56
Electronic systems of Positioning Fixing and Navigation	3.1 ELECTRONIC SYSTEMS OF POSITION FIXING AND NAVIGATION	8
	3.1.1 Basic principles of terrestrial navigation systems	
	3.1.2 Global navigation satellite systems	
	3.1.3 GPS	
	3.2 USE OF RADAR AND ARPA TO MAINTAIN SAFETY OF	8

	NAVIGATION (See IMO model course 1.07 and STCW Convention 1978, as amended, regulation I/12)	
	Sub Total	16
Ship's Structure and Fittings	4.1 THE PRINCIPAL STRUCTURAL MEMBERS OF A SHIP	14
	4.1.1 Ship dimensions and form	
	4.1.2 Ship stresses	
	4.1.3 Hull structure	
	4.1.4 Bow and stern regions	
	4.1.5 Fittings	
	4.1.6 Rudders and propellers	
	4.1.7 Load lines and draught marks	
	Sub Total	14
Manoeuvre the Ship	5.1 MANOEUVRE THE SHIP	17
	5.1.1 SHIP MANOEUVRING AND HANDLING	
	5.1.1.1 Turning circles and stopping distances	
	5.1.1.2 Effect of wind and current on ship handling	
	5.1.1.3 Maneuvers for rescue of person overboard	
	5.1.1.4 Squat, shallow water and similar effects	
	5.1.1.5 Proper procedures for anchoring and mooring	
	Sub Total	17
Watchkeeping duties	6.1 MAINTAIN A SAFE NAVIGATIONAL WATCH	8
	6.1.1 PRINCIPLES IN KEEPING A NAVIGATIONAL WATCH	
	6.1.1.1 Principles to be observed in keeping a navigational watch	
	6.1.1.2 Keeping a watch in port	
	6.1.2 BRIDGE RESOURCE MANAGEMENT	8
	6.1.2.1 1.2.3.1 Bridge resource management	
	6.1.3 USE OF INFORMATION FROM NAVIGATIONAL EQUIPMENT FOR MAINTAINING A SAFE NAVIGATIONAL WATCH	4
	6.1.3.1 Speed measurement	
	6.1.3.2 Operational use of AIS (See IMO model course 1.34)	
	6.1.4 KNOWLEDGE OF BLIND PILOTAGE TECHNIQUES	2
	6.1.4.1 Knowledge of navigational techniques used for safe navigation in restricted visibility	
	6.1.5 USE OF REPORTING IN ACCORDANCE WITH THE GENERAL PRINCIPLES FOR SHIP REPORTING SYSTEMS AND WITH VTS PROCEDURES	2
	6.1.5.1 Use of reporting in accordance with the general principles for ship reporting systems and with VTS procedures	
6.2 APPLICATION OF LEADERSHIP AND TEAMWORKING SKILLS (See IMO model course 1.39 and STCW 2010 regulation I/and section A-VI/1 paragraph	6	
	Sub Total	30
Meteorology	7.1 METEOROLOGY	12
	7.1.1 Shipborne meteorological instruments	
	7.1.2 Atmospheric pressure	
	7.1.3 Wind	
	7.1.4 Cloud and precipitation	
	7.1.5 Visibility	
	7.1.6 Structure of depressions	

	7.1.7	Recording and reporting weather observations	
	7.1.8	Weather forecasting	
	Sub Total		12
Respond to Emergencies	8.1	INITIAL ACTION FOLLOWING COLLISION OR GROUNDING	2
	8.1.1	Procedures for abandoning ship	
	8.2	RESCUING PERSONS FROM THE SEA, ASSISTING A SHIP IN DISTRESS AND PORT EMERGENCIES	4
	8.2.1	Rescue of persons from a vessel in distress	
	8.2.2	Actions for emergencies in port	
	8.2.3	Measures for assisting a vessel in distress	
	8.3	PREVENT, CONTROL AND FIGHT FIRES ON BOARD (See IMO model courses 2.03, and STCW 2010 regulation VI/3)	2
	8.4	OPERATE LIFE-SAVING APPLIANCES (See IMO model course 1.23, and STCW 2010 regulation VI/2 paragraph 1-4)	2
	8.5	APPLY MEDICAL FIRST AID ON BOARD SHIP (See IMO model course 1.14 and STCW regulation VI/4 paragraph 1-3)	2
	8.6	CONTRIBUTE TO SAFETY OF PERSONNEL AND SHIP (See IMO model courses 1.13, 1.19, 1.20, 1.21, and STCW regulation VI/1 and section A-VI/1 paragraph 2)	2
	Sub Total		14
English	9.1	ENGLISH LANGUAGE	20
	9.1.1	USE IMO STANDARD MARINE COMMUNICATION PHRASES	
	9.1.2	USE THE INTERNATIONAL CODE OF SIGNALS	2
	9.1.2.1	International Code of Signals	
	Sub Total		22
Legislative requirements	10.1	MONITOR COMPLIANCE WITH LEGISLATIVE REQUIREMENTS	
	10.1.1	BASIC WORKING KNOWLEDGE OF THE RELEVANT IMO CONVENTIONS CONCERNING SAFETY OF LIFE AT SEA, SECURITY AND PROTECTION OF THE MARINE ENVIRONMENT	
	10.1.1.1	Safety	
		- SOLAS, 1974 as amended	
		- SOLAS – Subdivision and stability	
		- SOLAS – Fire protection, detection and extinction	
		- SOLAS – LSA and arrangements (LSA Code)	
		- SOLAS – Radio communications	
		- SOLAS – Carriage of grain	
		- SOLAS – Carriage of dangerous goods	
		- STCW Convention, 1978, as amended	
		- International Convention on Load Lines, 1966	
		- ISM Code	
		- Tonnage 1969	
		- BWM 2004	
		- AFS Convention, 2001	
		- Guidelines on the Enhanced Programme of Inspections during Surveys of Bulk Carriers and Oil Tankers	
		- Code of Safe Working Practices for Merchant Seamen	
	10.2	MAINTAIN A SAFE NAVIGATIONAL WATCH	30
10.2.1	THOROUGH KNOWLEDGE OF THE COLLISION REGULATIONS		

	10.2.1.1	Content, application and intent of International Regulations for Preventing Collisions at Sea, 1972, as amended 100	
	Sub Total		70
Cargo handling and Stowage	11.1	MONITOR THE LOADING, STOWAGE, SECURING, CARE DURING THE VOYAGE AND UNLOADING OF CARGOES	16
	11.1.1	THE EFFECT OF CARGO, INCLUDING HEAVY LIFTS ON THE SEAWORTHINESS AND STABILITY OF THE SHIP	
	11.1.1.1	Draught, trim and stability	
	11.1.1.2	Securing cargoes	
	11.1.1.3	Deck cargo	
	11.1.1.4	Container cargo	
	11.1.1.5	Bulk cargo	
	11.1.1.6	Bulk grain cargo	
	11.1.2	SAFE HANDLING, STOWAGE AND SECURING OF CARGOES	23
	11.1.2.1	Cargo care	
	11.1.2.2	Dangerous, hazardous and harmful cargoes	
	11.1.2.3	Cargo handling equipment and safety	
	11.1.2.4	Oil tanker piping and pumping arrangements	
	11.1.2.5	Precautions before entering enclosed or contaminated spaces	
	11.1.2.6	Cargo calculations and cargo plans	
	11.2	INSPECT AND REPORT DEFECTS AND DAMAGE TO CARGO SPACES, HATCH COVERS AND BALLAST TANKS	12
	11.2.1	Cargo space inspection	
11.2.2	Hatch covers inspection		
11.2.3	Ballast tanks inspection		
11.2.4	Damage report		
	Sub Total		51
Seaworthiness	12.1	3.2 MAINTAIN THE SEAWORTHINESS OF THE SHIP	27
	12.1.1	3.2.1 STABILITY, TRIM AND STRESS TABLES	
	12.1.1.1	3.2.1.1 Displacement	
	12.1.1.2	3.2.1.2 Buoyancy	
	12.1.1.3	3.2.1.3 Fresh water allowance	
	12.1.1.4	3.2.1.4 Statical stability	
	12.1.1.5	3.2.1.5 Initial stability	
	12.1.1.6	3.2.1.8 Movement of centre of gravity	
	12.1.1.7	3.2.1.9 List and its correction	
	12.1.1.8	3.2.1.10 Effect of slack tanks	
	12.1.1.9	3.2.1.12 Actions to be taken in the event of partial loss of intact buoyancy	
12.1.1.10	3.2.1.13 Stress tables and stress calculating equipment (loadicator)		
	Sub Total		27
Pollution prevention	13.1	ENSURE COMPLIANCE WITH POLLUTION PREVENTION REQUIREMENTS	2
	13.1.1	PRECAUTIONS TO BE TAKEN TO PREVENT POLLUTION OF THE MARINE ENVIRONMENT	
	13.1.1.1	MARPOL 73/78 14	
	13.1.2	ANTI-POLLUTION PROCEDURES AND ASSOCIATED EQUIPMENT	8
	13.1.2.1	Oil Record Book (Part II – Cargo/Ballast operations) 1	

	13.1.2.2	Shipboard Oil Pollution Emergency Plan (SOPEP) including Shipboard Marine Pollution Emergency Plans (SMPEP) for Oil and/or Noxious Liquid Substances and Vessel Response Plan (VRP) 1	
	13.1.2.3	Operating procedures of anti-pollution equipment, sewage plant, incinerator, comminutor, ballast water treatment plant	
	13.1.2.4	Volatile Organic Compound (VOC) Management Plan, Garbage Management System, Anti-fouling systems, Ballast Water Management and their discharge criteria	
	13.1.3	PROACTIVE MEASURES TO PROTECT THE MARINE ENVIRONMENT	2
	13.1.3.1	Proactive measures to protect the marine environment	
		Sub Total	12
Other	14.1	GMDSS	5
		Sub Total	5
		Grand Total	396

SECTION D: Detailed Onboard Training Program for Engineer Officer
(STCW code A-III/1, Model course 7.04)

Function		Knowledge, understanding and proficiency	Hours
Propulsion plant	1.1	BASIC CONSTRUCTION AND OPERATION PRINCIPLES OF MACHINERY SYSTEMS	47
	1.1.1	Marine diesel engine	
	1.2	SAFETY AND EMERGENCY PROCEDURES FOR OPERATION OF PROPULSION PLANT MACHINERY INCLUDING CONTROL SYSTEMS	
	1.2.1	Main engine auto slow down and shut down	
	1.3	PREPARATION, OPERATION, FAULT DETECTION AND NECESSARY MEASURES TO PREVENT DAMAGE FOR THE FOLLOWING MACHINERY ITEMS AND CONTROL SYSTEMS	
	1.3.1	Main engine and associated auxiliaries	
	1.3.1	Auxiliary prime movers and associated systems	
	1.4	MAINTENANCE AND REPAIR OF SHIPBOARD MACHINERY AND EQUIPMENT	
	1.4.1	MAINTENANCE AND REPAIR SUCH AS DISMANTLING, ADJUSTMENT AND REASSEMBLING OF MACHINERY AND EQUIPMENT	
	1.4.1.1	Diesel engine	
	1.4.1.2	Turbocharger	
	1.5	BASIC CONSTRUCTION AND OPERATION PRINCIPLES OF MACHINERY SYSTEMS	12
	1.5.1	Shafting installations and propeller	
	1.6	MAINTENANCE AND REPAIR SUCH AS DISMANTLING, ADJUSTMENT AND REASSEMBLING OF MACHINERY AND EQUIPMENT	
	1.6.1	Shafting system	
Sub Total			80
Aux. machinery	2.1	OPERATE MAIN AND AUXILIARY MACHINERY AND ASSOCIATED CONTROL SYSTEMS	69
	2.1.1	BASIC CONSTRUCTION AND OPERATION PRINCIPLES OF MACHINERY SYSTEMS	
	2.1.1.1	Marine boiler	
	2.1.2	PREPARATION, OPERATION, FAULT DETECTION AND NECESSARY MEASURES TO PREVENT DAMAGE FOR THE FOLLOWING MACHINERY ITEMS AND CONTROL SYSTEMS	
	2.1.2.1	Boiler and associated auxiliaries, and steam systems	
	2.1.2.2	Main boiler auto shut down	
	2.1.3	MAINTENANCE AND REPAIR SUCH AS DISMANTLING, ADJUSTMENT AND REASSEMBLING OF MACHINERY AND EQUIPMENT	
	2.1.3.1	Centrifugal pumps	
	2.1.3.2	Heat exchanger	

	2.1.3.3	Boiler	
	2.1.4	BASIC CONSTRUCTION AND OPERATION PRINCIPLES OF MACHINERY SYSTEMS	
	2.1.4.1	Other auxiliaries	
	2.1.4.2	Steering gear	
	2.1.4.3	Deck machinery	
	2.1.4.4	Other auxiliaries	
	2.1.5	MAINTENANCE AND REPAIR OF SHIPBOARD MACHINERY AND EQUIPMENT	
	2.1.5.1	Reciprocating pumps	
	2.1.5.2	Screw and gear pumps	
	2.1.5.3	Air compressors	
	2.1.5.4	Refrigerator	
	2.1.5.5	Oils fuels and lubricating system	
	2.1.5.6	Deck machinery	
	Sub Total		41
			110
Electric, electronics & Control Engineering	3.1	SAFETY REQUIREMENTS FOR WORKING ON ELECTRICAL SYSTEMS	24
	3.2	BASIC ELECTRICAL ENGINEERING	
	3.2.1	Generators	
	3.2.2	Batteries	
	3.3	MAINTENANCE AND REPAIR	
	3.3.1	Principles of maintenance	
	3.3.2	Generator	
	3.3.3	D.C. Electrical systems and equipment	
	3.4	SAFETY AND EMERGENCY PROCEDURES FOR OPERATION OF PROPULSION PLANT MACHINERY INCLUDING CONTROL SYSTEMS	
	3.4.1	Power failure	
	3.4.2	Emergency procedures for other equipment/installations	
	3.5	FUNCTION AND PERFORMANCE TEST AND CONFIGURATION	33
	3.5.1	Power distribution systems	
	3.5.2	Switchboard	
	3.5.3	Starters	
	3.5.4	Distribution system	
	3.6	OPERATE ELECTRICAL, ELECTRONIC AND CONTROL SYSTEM	
	3.6.1	Electrical motors	
	3.6.2	Electrical motor starting methodologies	
	3.6.3	Lighting	
	3.7	MAINTENANCE AND REPAIR OF ELECTRICAL AND ELECTRONIC EQUIPMENT	
	3.7.1	Electrical motors	
	3.8	DETECTION OF ELECTRIC MALFUNCTION AND MEASURES TO PREVENT DAMAGE	
	3.8.1	Fault protection	
3.8.2	Fault location		
3.9	CONSTRUCTION AND OPERATION OF ELECTRICAL TESTING AND MEASURING EQUIPMENT		

	3.10	OPERATE MAIN AND AUXILIARY MACHINERY AND ASSOCIATED CONTROL SYSTEMS	
	3.11	BASIC CONSTRUCTION AND OPERATION PRINCIPLES OF MACHINERY SYSTEMS	
	3.11.1	Automatic control systems	
	3.11.2	Sequential control	
	3.11.3	Proportional-integral-Derivative (PID) control	39
	3.11.4	Measurement of process value	
	3.11.5	Transmission of signals	
	3.12	FUNCTION AND PERFORMANCE TEST AND CONFIGURATION	
	3.12.1	Monitoring systems	
	3.12.2	Automatic control devices	
	3.12.3	Protective devices	
	Sub Total		96
General Duties	4.1	MAINTAIN A SAFE ENGINEERING WATCH	
	4.1.1	THOROUGH KNOWLEDGE OF PRINCIPLES TO BE OBSERVED IN KEEPING AN ENGINEERING WATCH	
	4.1.2	SAFETY AND EMERGENCY PROCEDURES	
	4.1.3	SAFETY PRECAUTIONS TO BE OBSERVED DURING A WATCH AND IMMEDIATE ACTIONS TO BE TAKEN	
	4.1.4	ENGINE-ROOM RESOURCE MANAGEMENT	
	4.2	USE INTERNAL COMMUNICATION SYSTEMS	
	4.2.1	OPERATION OF ALL INTERNAL COMMUNICATION SYSTEMS ON BOARD	31
	4.3	OPERATE FUEL, LUBRICATION, BALLAST AND OTHER PUMPING SYSTEMS AND ASSOCIATED CONTROL SYSTEMS	
	4.3.1	OPERATIONAL CHARACTERISTICS OF PUMPS AND PIPING SYSTEMS INCLUDING CONTROL SYSTEMS	
	4.3.2	OPERATE OF PUMPING SYSTEMS	
	4.3.2.1	Routine pumping operation	
	4.3.2.2	Operation of bilge, ballast and cargo pumping system	
	4.3.2	THE INTERPRETATION OF PIPING, HYDRAULIC AND PNEUMATIC DIAGRAMS	
	4.4	APPROPRIATE USE OF HAND TOOLS, MACHINE TOOLS AND MEASURING INSTRUMENTS FOR FABRICATION AND REPAIR ON BOARD	
	4.4.1	METHODS FOR CARRYING OUT SAFE EMERGENCY/TEMPORARY REPAIRS	
	4.4.2	SAFETY MEASURES TO BE TAKEN TO ENSURE A SAFE WORKING ENVIRONMENT AND FOR USING HAND TOOLS, MACHINE TOOLS AND MEASURING INSTRUMENTS	
	4.4.3	USE HAND TOOLS, MACHINE TOOLS AND MEASURING INSTRUMENTS	55
	4.4.3.1	Hand tools	
	4.4.3.2	Powered hand tools	
	4.4.3.3	Measuring instruments	
4.4.4	USE OF VARIOUS TYPES OF SEALANTS AND PACKINGS		
4.5	MAINTENANCE AND REPAIR OF SHIPBOARD MACHINERY AND EQUIPMENT		
4.5.1	APPROPRIATE BASIC MECHANICAL KNOWLEDGE AND		

	SKILLS	
4.5.2	MAINTENANCE AND REPAIR SUCH AS DISMANTLING, ADJUSTMENT AND REASSEMBLING OF MACHINERY AND EQUIPMENT	
4.5.2.1	Fastening	
4.5.2.2	Valves	
4.5.3	SAFETY MEASURES TO BE TAKEN FOR REPAIR AND MAINTENANCE INCLUDING THE SAFE ISOLATION OF SHIPBOARD MACHINERY AND EQUIPMENT REQUIRED BEFORE PERSONNEL ARE PERMITTED TO WORK ON SUCH MACHINERY OR EQUIPMENT	
4.5.3.1	ISM Code	
4.5.3.2	SMS	
4.5.3.3	Safety measures to be taken	
4.6	OILY WATER SEPARATOR/SIMILAR EQUIPMENT REQUIREMENTS AND OPERATION	
4.7	ENSURE COMPLIANCE WITH POLLUTION PREVENTION REQUIREMENTS	
4.7.1	PRECAUTIONS TO BE TAKEN TO PREVENT POLLUTION OF THE MARINE ENVIRONMENT	
4.7.1.1	MARPOL 73/78 Technical Annexes: Annex I to VI of MARPOL 73/78 in detail	
4.7.1.2	Conventions and legislation adopted by various countries	
4.7.2	ANTI-POLLUTION PROCEDURES AND ASSOCIATED EQUIPMENT	
4.7.2.1	Control of discharge of oil	
4.7.2.2	Oil Record Book (Part I - Machinery Space Operations) and Part II - Cargo/Ballast operations)	24
4.7.2.3	Shipboard Oil Pollution Emergency Plan (SOPEP) including Shipboard Marine Pollution Emergency Plans (SMPEP) for Oil and/or Noxious Liquid Substances and Vessel Response Plan (VRP)	
4.7.2.4	Operating procedures of anti-pollution equipment, sewage plant, incinerator, comminutor, ballast water treatment plant	
4.7.2.5	Volatile Organic Compound (VOC) Management Plan, Garbage Management System, Anti-fouling systems, Ballast Water Management and their discharge criteria	
4.7.3	PROACTIVE MEASURES TO PROTECT THE MARINE ENVIRONMENT	
4.7.3.1	Proactive measures to protect the marine environment	
Sub Total		110
Grand Total		396

Appendix 2: APEC SEN Onboard Training Record Book for Deck Cadets



ON BOARD TRAINING RECORD BOOK

ON A VESSEL OF 500 GROSS TONNAGE AND ABOVE

This training record book was compiled on the basis of the competence requirements of the STCW Convention, 1978, as amended and maritime industry standards and guidelines and other requirements of flag States' additional to the minimum standards of the STCW Convention including the 2010 amendments to the Convention and Code.

APEC SEN



CADET NAME:

.....

HOME ADDRESS:

.....

DATE TRAINING STARTED

.....

INTRODUCTION

The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978 was amended in 2010 and subsequently in 2016 and 2017.

This Training Record Book takes careful account of the 2010 and subsequent amendments to the STCW Convention, 1978, as amended, the current standards for cadets, including additional competencies for industry guidelines issued by several Maritime Associations and Councils, Best Practices by Major Shipping Companies, Flag States requirements in addition to STCW Convention.

The updates included in this record book focus on cadets' ability to discharge their duties competently and achieve the highest standards of competency in the different maritime skills needed to serve as a watch keeping officer on board upon obtaining the certificate of competency. The STCW Convention, 1978, as amended requires the documentation of onboard training of cadets within a structured training programme in a training record book as documentary evidence of completion of, and compliance with, an approved structured training programme, in addition to any industry requirements of guidelines issued by industry organizations such as Maritime Associations and Councils, Best Practices by major shipping companies, flag States in addition to requirements of the STCW Convention, 1978, as amended.

The tasks in this book have been specifically planned to ensure that trainees follow the qualification criteria for the competencies set out in the STCW Code and that, the onboard training officers monitoring their performance use appraisal criteria based on the STCW Code utmost. Although, the tasks were planned to take into account that it is on board training and for certain cases, the tasks and the related requirements are discussed in greater depth than in the STCW Code. The tasks are also planned to make sure that trainees make the most practicable use of their seagoing service and to enable trainees' onboard supervisors to make an accurate determination about trainees' performance.

Keep in mind that in order to be certificated as a navigational officer on watch on vessels of a gross tonnage of 500 and above, it is not only required to complete this training record book and, its delivery to the relevant authority does not in itself represent an official evaluation of the trainee's competence. Nevertheless, the completion of the On-Board Training Record Book should contain detailed information to provide documentary evidence that the trainee has undergone on-board training within a structured training program, and demonstrated knowledge, understanding and proficiency of all the competencies required by the STCW Code.

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SECTION 1 METHODOLOGY

This record book is to provide verifiable documentary evidence that a cadet has gained the knowledge, understanding and proficiency required to be certificated as a watchkeeping deck officer in compliance with the STCW Convention, 1978, as amended. Guidelines on Best Practices issued by industry associations and Flag States' requirements additional to the minimum standards in the STCW Convention, 1978, as amended could be pursued through a formal training schedule to make the most of their training opportunity at sea. Thus, it is critical that cadets should follow these guidelines diligently.

The proper completion of this book is crucial because it will be submitted to their maritime training colleges' examiners and instructors, and be verified and utilized during the assessment by the Administration during the process for awarding a certificate of competency to those who will be deemed competent by the Administration's assessors.

When cadets are assigned on board for onboard training, the training record book will be scrutinized by the masters of the ships served by the cadet, on board training officers and the shipping company before being signed off.

COMPLETION GUIDE

At the time the trainee receives this record book she/he will be personally responsible for keeping it safe throughout training so she/he can fill-in the details required on the following pages to comply with the structured training approved programme required by the STCW Convention, Section 3, After the trainee joins each ship, she/he should fill-in the details of compulsory safety orientation and training immediately after the shipboard familiarization training has been completed. The designated training officer on board should sign that mandatory orientation as required has been undertaken.

Immediately after the trainee joins each ship:

- Section 4 on the vessel's technical details should be completed by the trainee. The Master and the designated training officer on board each ship should provide an opportunity for this exercise to take place.
- The designated on-board training officer will review this Book in order to examine the trainee's progress. A strategy will be set in place to ensure that the competencies required need to be demonstrated. Section 10 provides a tasks' summary chart.
- Trainees should progressively fill in the task summary chart in section 10.
- The Training Record Book will be sent to the Master for review every month and at the end of each voyage. The comments of the Master should be registered, dated and signed. Comments should only apply to the knowledge and functional development of the cadets.
- The Training Record Book will be assigned to the training officer on board on each joining ship-and then, as far as the voyage schedule allows, every week to record comments on pages 12-17.
- The shipping company will also check the training record book. Comments should be recorded on page 20 of this document.
- A detailed record of the seagoing activity of the trainee will be maintained, along with the time spent on bridge watchkeeping duties (page 11), and practical training. During seagoing service, cadets should practice their knowledge of the International Regulations on the Prevention of Collisions at Sea (pages 47 - 48).
- Cadets are expected to finish a number of written projects, some of which can be found on page 162.

SECTION 2 PROGRESS RECORD

Cadet's Personal Information (to be completed by cadets)

Cadet Full Name

Seafarer's Book No. Date of Birth

Home Address

.....

Change of Address (if applicable)

.....

Company Name

Address

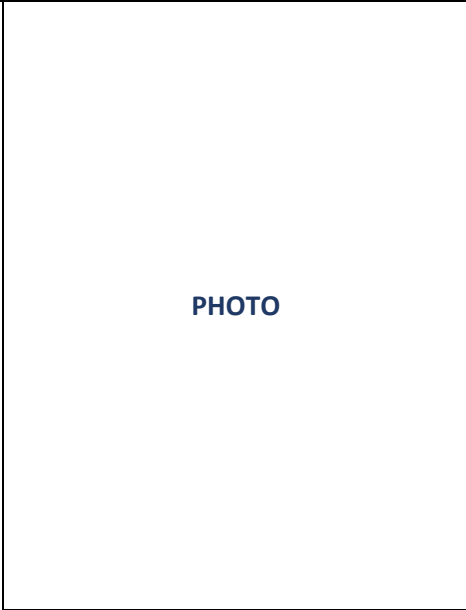
Cadet Agreement

Started Date Finished Date

Change of Company (if applicable)

Address

Date of Change Finished Date



TRAINING PROGRAMMES

College Phase		
Training Program	From	To
Sea Phase		
Training Program	From	To

BASIC TRAINING as required by Section A-V1/1, paragraph 2 of the STCW Code

Completed Basic Training as part of mandatory pre-sea training. Fill in the details below:

	Date	Location	Document Number
Personal Survival Techniques			
Fire Prevention and Firefighting			
Elementary First Aid			
Personal Safety and Social Responsibilities			

OTHER TRAINING PROGRAMMES

	Date	Location	Document Number
Steering Certificate as per the record book			
Proficiency in survival craft and rescue boats.			
Security training:			
- Security awareness training.			
- Certificate of proficiency for seafarers with designated security duties.			
- Ship Security Officer.			
General Operator's Certificate (GMDSS)			
Advanced fire fighting			

SHIPBOARD SEA TIME RECORD OF SERVICE

SHIP NAME	IMO Number	Dates		Time Spent on Bridge Watchkeeping Functions		Voyage Total – Seagoing Service	
		Sign on	Sign Off	Months	Days	Months	Days
Total Service							

DESIGNATED ONBOARD TRAINING OFFICER'S REVIEW OF CADET TRAINING PROGRESS

This table should be completed at least once a week or more as the trading of the vessel allows.

Comments should NOT refer to character and should only relate to the cadet's training, practical progress and competence.

Ship Name	Comments	Name, Certificate No. and Place of issue	Initials	Date

CONTINUE - DESIGNATED ONBOARD TRAINING OFFICER'S REVIEW OF CADET TRAINING PROGRESS

Ship Name	Comments	Name, Certificate No. and Place of issue	Initials	Date

CONTINUE - DESIGNATED ONBOARD TRAINING OFFICER'S REVIEW OF CADET TRAINING PROGRESS

Ship Name	Comments	Name, Certificate No. and Place of issue	Initials	Date

CONTINUE - DESIGNATED ONBOARD TRAINING OFFICER'S REVIEW OF CADET TRAINING PROGRESS

Ship Name	Comments	Name, Certificate No. and Place of issue	Initials	Date

CONTINUE - DESIGNATED ONBOARD TRAINING OFFICER'S REVIEW OF CADET TRAINING PROGRESS

Ship Name	Comments	Name, Certificate No. and Place of issue	Initials	Date

CONTINUE - DESIGNATED ONBOARD TRAINING OFFICER'S REVIEW OF CADET TRAINING PROGRESS

Ship Name	Comments	Name, Certificate No. and Place of issue	Initials	Date

MASTER'S MONTHLY INSPECTION OF RECORD BOOK

Comments should NOT refer to character and should only relate to the cadet's training, practical progress and competence.

Ship	Comments	Master's Name, Certificate No. and Place of issue	Master's Initials	Date	Ship's Official Stamp

CONTINUED - MASTER'S MONTHLY INSPECTION OF RECORD BOOK

Comments should NOT refer to character and should only relate to the cadet's training, practical progress and competence.

Ship	Comments	Master's Name, Certificate No. and Place of issue	Master's Initials	Date	Ship's Official Stamp

COMPANY'S INSPECTION OF RECORD BOOK

Comments should NOT refer to character and should only relate to the cadet's training, practical progress and competence.

Comments	Name and position of company's training personnel	Initials	Date

LIST OF COMPUTER-BASED TRAINING PROGRAMMES, PUBLICATIONS, OR VIDEO STUDIED/USED

Date	Subject/Title	Officer's Initials

SECTION 3 COMPULSORY SAFETY AND SHIPBOARD FAMILIARIZATION

Safety Familiarization as required by STCW Code, Section A-V1/1 paragraph 1

Before being assigned to shipboard duties all seafarers must receive basic safety familiarization to know what to do in an emergency. The master or responsible officer on each ship should sign and date below to signify that the cadet has received training or instruction to be able to carry out the following tasks or duties.

FIRST SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
Demonstrate communication skills with other persons on board on elementary safety matters			
Demonstrate Understanding of safety information symbols, signs and alarm signals			
Demonstrate knowledge and understanding of: A person falls overboard Fire or smoke is detected The fire or abandon ship alarm is sounded			
Demonstrate knowledge and understanding of identifying muster and embarkation stations and emergency escape routes			
Demonstrate knowledge and understanding of life jackets and survival suits			
Demonstrate knowledge and understanding of raising the alarm and have a basic knowledge of the use of portable fire extinguishers			
Demonstrate knowledge and understanding of taking immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board			
Demonstrate knowledge and understanding of closing and opening the fire, weathertight and watertight doors fitted in the particular ship, other than those for hull openings			

SECOND SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
Demonstrate communication skills with other persons on board on elementary safety matters			
Demonstrate understanding of safety information symbols, signs and alarm signals			
Demonstrate knowledge and understanding of: A person falls overboard Fire or smoke is detected The fire or abandon ship alarm is sounded			
Demonstrate knowledge and understanding of identifying muster and embarkation stations and emergency escape routes			
Demonstrate knowledge and understanding of life jackets and survival suits			
Demonstrate knowledge and understanding of raising the alarm and have a basic knowledge of the use of portable fire extinguishers			
Demonstrate knowledge and understanding of taking immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board			
Demonstrate knowledge and understanding of closing and opening the fire, weathertight and watertight doors fitted in the particular ship, other than those for hull openings			

THIRD SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
Demonstrate communication skills with other persons on board on elementary safety matters			
Demonstrate understanding of safety information symbols, signs and alarm signals			
Demonstrate knowledge and understanding of: A person falls overboard Fire or smoke is detected The fire or abandon ship alarm is sounded			
Demonstrate knowledge and understanding of identifying muster and embarkation stations and emergency escape routes			
Demonstrate knowledge and understanding of life jackets and survival suits			
Demonstrate knowledge and understanding of raising the alarm and have a basic knowledge of the use of portable fire extinguishers			
Demonstrate knowledge and understanding of taking immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board			
Demonstrate knowledge and understanding of closing and opening the fire, weathertight and watertight doors fitted in the particular ship, other than those for hull openings			

FOURTH SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
Demonstrate communication skills with other persons on board on elementary safety matters			
Demonstrate understanding of safety information symbols, signs, and alarm signals			
Demonstrate knowledge and understanding of: A person falls overboard Fire or smoke is detected The fire or abandon ship alarm is sounded			
Demonstrate knowledge and understanding of identifying muster and embarkation stations and emergency escape routes			
Demonstrate knowledge and understanding of life jackets and survival suits			
Demonstrate knowledge and understanding of raising the alarm and have a basic knowledge of the use of portable fire extinguishers			
Demonstrate knowledge and understanding of taking immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board			
Demonstrate knowledge and understanding of closing and opening the fire, weathertight and watertight doors fitted in the particular ship, other than those for hull openings			

FIFTH SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
Demonstrate communication skills with other persons on board on elementary safety matters			
Demonstrate understanding of safety information symbols, signs, and alarm signals			
Demonstrate knowledge and understanding of: A person falls overboard Fire or smoke is detected The fire or abandon ship alarm is sounded			
Demonstrate knowledge and understanding of identifying muster and embarkation stations and emergency escape routes			
Demonstrate knowledge and understanding of life jackets and survival suits			
Demonstrate knowledge and understanding of raising the alarm and have a basic knowledge of the use of portable fire extinguishers			
Demonstrate knowledge and understanding of taking immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board			
Demonstrate knowledge and understanding of closing and opening the fire, weathertight and watertight doors fitted in the particular ship, other than those for hull openings			

SIXTH SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
Demonstrate communication skills with other persons on board on elementary safety matters			
Demonstrate understanding of safety information symbols, signs and alarm signals			
Demonstrate knowledge and understanding of: A person falls overboard Fire or smoke is detected The fire or abandon ship alarm is sounded			
Demonstrate knowledge and understanding of identifying muster and embarkation stations and emergency escape routes			
Demonstrate knowledge and understanding of life jackets and survival suits			
Demonstrate knowledge and understanding of raising the alarm and have a basic knowledge of the use of portable fire extinguishers			
Demonstrate knowledge and understanding of taking immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board			
Demonstrate knowledge and understanding of closing and opening the fire, weathertight and watertight doors fitted in the particular ship, other than those for hull openings			

FAMILIARISE THE SHIPBOARD as required by Regulation 1/14 of the STCW Convention

The location of safety and emergency equipment differs from ship to ship. Seafarers should be familiar with their duties and all ship arrangements, installations, equipment procedures and ship characteristics that are relevant to routine or emergency duties. Cadets should complete the following tasks or duties as soon as possible on joining the ship.

FIRST SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
A- Watchkeeping procedures and arrangements:			
Visit bridge, lookout post, forecastle, poop-deck, main deck, and other work areas			
Understudy steering controls, telephones, telegraphs, and other bridge equipment and displays			
Activate equipment to be used in routine duties, under supervision			
B- Safety and Emergency procedures			
Read and demonstrate an understanding of your Company's Fire and Safety Regulations			
Demonstrate recognition of the alarm for: <ul style="list-style-type: none"> • FIRE • EMERGENCY • ABANDON SHIP 			
Locate medical and first aid equipment			
Locate fire-fighting equipment: alarm activating points, alarm bells, extinguishers, hydrants, breathing apparatus, fire-fighter's outfits, and hoses			
Locate rocket line throwing apparatus			
Locate distress rockets, flares, and other pyrotechnics			

CONTINUE - FAMILIARISE THE SHIPBOARD as required by Regulation 1/14 of the STCW Convention

Ship's Name			
Task/Duty	Training Officer	Sign	Date
B- (Continue) Safety and Emergency procedures			
Locate breathing apparatus and firefighter's outfits, etc.			
Locate EPIRB, SART and VHF radios for use in emergency			
Locate Emergency Escape Breathing Devices (EEBD's)			
Locate CO2 bottle room, and release points and control valves for machinery spaces, engine room, pump rooms, cargo tanks and holds			
Locate and understand the operation of the emergency fire pump			
Discuss reasons for the provision of 'International Shore Coupling'			
Demonstrate the significance and contents of 'Fire Control Plan', describe how to keep the Fire Control Plan updated at all times.			
C- Environmental Protection			
Understudy the procedure for handling garbage, rubbish, and other wastes			
Understudy the use of garbage compactor or other equipment as appropriate			
Understanding the use of Anti-Pollution equipment and chemicals			

SECOND SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
A- Watchkeeping procedures and arrangements:			
Visit bridge, lookout post, forecastle, poop-deck, main deck and other work areas			
Understudy steering controls, telephones, telegraphs, and other bridge equipment and displays			
Activate equipment to be used in routine duties, under supervision			
B- Safety and Emergency procedures			
Read and demonstrate an understanding of your Company's Fire and Safety Regulations			
Demonstrate recognition of the alarm for: <ul style="list-style-type: none"> • FIRE • EMERGENCY • ABANDON SHIP 			
Locate medical and first aid equipment			
Locate fire-fighting equipment: alarm activating points, alarm bells, extinguishers, hydrants, breathing apparatus, fire-fighter's outfits and hoses			
Locate rocket line throwing apparatus			
Locate distress rockets, flares, and other pyrotechnics			

CONTINUE - FAMILIARISE THE SHIPBOARD as required by Regulation 1/14 of the STCW Convention

Ship's Name				
Task/Duty	Training Officer	Sign	Date	
B- (Continue) Safety and Emergency procedures				
Locate breathing apparatus and firefighter's outfits, etc.				
Locate EPIRB, SART and VHF radios for use in emergency				
Locate Emergency Escape Breathing Devices (EEBD's)				
Locate CO2 bottle room, and release points and control valves for machinery spaces, engine room, pump rooms, cargo tanks and holds				
Locate and understand the operation of the emergency fire pump				
Discuss reasons for the provision of 'International Shore Coupling'				
Demonstrate the significance and contents of 'Fire Control Plan', describe how to keep the Fire Control Plan updated at all times				
C- Environmental Protection				
Understudy the procedure for handling garbage, rubbish, and other wastes				
Understudy the use of garbage compactor or other equipment as appropriate				
Understanding the use of Anti-Pollution equipment and chemicals				

THIRD SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
A- Watchkeeping procedures and arrangements:			
Visit bridge, lookout post, forecastle, poop-deck, main deck and other work areas			
Understudy steering controls, telephones, telegraphs and other bridge equipment and displays			
Activate equipment to be used in routine duties, under supervision			
B- Safety and Emergency procedures			
Read and demonstrate an understanding of your Company's Fire and Safety Regulations			
Demonstrate recognition of the alarm for: <ul style="list-style-type: none"> • FIRE • EMERGENCY • ABANDON SHIP 			
Locate medical and first aid equipment			
Locate fire-fighting equipment: alarm activating points, alarm bells, extinguishers, hydrants, breathing apparatus, fire-fighter's outfits and hoses			
Locate rocket line throwing apparatus			
Locate distress rockets, flares and other pyrotechnics			

CONTINUE - FAMILIARISE THE SHIPBOARD as required by Regulation 1/14 of the STCW Convention

Ship's Name			
Task/Duty	Training Officer	Sign	Date
B- (Continue) Safety and Emergency procedures			
Locate breathing apparatus and firefighter's outfits, etc.			
Locate EPIRB, SART and VHF radios for use in emergency			
Locate Emergency Escape Breathing Devices (EEBD's)			
Locate CO2 bottle room, and release points and control valves for machinery spaces, engine room, pump rooms, cargo tanks and holds			
Locate and understand the operation of the emergency fire pump			
Discuss reasons for the provision of 'International Shore Coupling'			
Demonstrate the significance and contents of 'Fire Control Plan', describe how to keep the Fire Control Plan updated at all times.			
C- Environmental Protection			
Understudy the procedure for handling garbage, rubbish, and other wastes			
Understudy the use of garbage compactor or other equipment as appropriate			
Understanding the use of Anti-Pollution equipment and chemicals			

FOURTH SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
A- Watchkeeping procedures and arrangements:			
Visit bridge, lookout post, forecastle, poop-deck, main deck and other work areas			
Understudy steering controls, telephones, telegraphs and other bridge equipment and displays			
Activate equipment to be used in routine duties, under supervision			
B- Safety and Emergency procedures			
Read and demonstrate an understanding of your Company's Fire and Safety Regulations			
Demonstrate recognition of the alarm for: <ul style="list-style-type: none"> • FIRE • EMERGENCY • ABANDON SHIP 			
Locate medical and first aid equipment			
Locate fire-fighting equipment: alarm activating points, alarm bells, extinguishers, hydrants, breathing apparatus, fire-fighter's outfits and hoses			
Locate rocket line throwing apparatus			
Locate distress rockets, flares and other pyrotechnics			

CONTINUE - FAMILIARISE THE SHIPBOARD as required by Regulation 1/14 of the STCW Convention

Ship's Name			
Task/Duty	Training Officer	Sign	Date
B- (Continue) Safety and Emergency procedures			
Locate breathing apparatus and firefighter's outfits, etc.			
Locate EPIRB, SART and VHF radios for use in emergency			
Locate Emergency Escape Breathing Devices (EEBD's)			
Locate CO2 bottle room, and release points and control valves for machinery spaces, engine room, pump rooms, cargo tanks and holds			
Locate and understand the operation of the emergency fire pump			
Discuss reasons for the provision of 'International Shore Coupling'			
Demonstrate the significance and contents of 'Fire Control Plan', describe how to keep the Fire Control Plan updated at all times.			
C- Environmental Protection			
Understudy the procedure for handling garbage, rubbish, and other wastes			
Understudy the use of garbage compactor or other equipment as appropriate			
Understanding the use of Anti-Pollution equipment and chemicals			

FIFTH SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
A- Watchkeeping procedures and arrangements:			
Visit bridge, lookout post, forecastle, poop-deck, main deck and other work areas			
Understudy steering controls, telephones, telegraphs and other bridge equipment and displays			
Activate equipment to be used in routine duties, under supervision			
B- Safety and Emergency procedures			
Read and demonstrate an understanding of your Company's Fire and Safety Regulations			
Demonstrate recognition of the alarm for: <ul style="list-style-type: none"> • FIRE • EMERGENCY • ABANDON SHIP 			
Locate medical and first aid equipment			
Locate fire-fighting equipment: alarm activating points, alarm bells, extinguishers, hydrants, breathing apparatus, fire-fighter's outfits and hoses			
Locate rocket line throwing apparatus			
Locate distress rockets, flares and other pyrotechnics			

CONTINUE - FAMILIARISE THE SHIPBOARD as required by Regulation 1/14 of the STCW Convention

Ship's Name			
Task/Duty	Training Officer	Sign	Date
B- (Continue) Safety and Emergency procedures			
Locate breathing apparatus and firefighter's outfits, etc.			
Locate EPIRB, SART and VHF radios for use in emergency			
Locate Emergency Escape Breathing Devices (EEBD's)			
Locate CO2 bottle room, and release points and control valves for machinery spaces, engine room, pump rooms, cargo tanks and holds			
Locate and understand the operation of the emergency fire pump			
Discuss reasons for the provision of 'International Shore Coupling'			
Demonstrate the significance and contents of 'Fire Control Plan', describe how to keep the Fire Control Plan updated at all times.			
C- Environmental Protection			
Understudy the procedure for handling garbage, rubbish, and other wastes			
Understudy the use of garbage compactor or other equipment as appropriate			
Understanding the use of Anti-Pollution equipment and chemicals			

SIXTH SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
A- Watchkeeping procedures and arrangements:			
Visit bridge, lookout post, forecastle, poopdeck, main deck and other work areas			
Understudy steering controls, telephones, telegraphs and other bridge equipment and displays			
Activate equipment to be used in routine duties, under supervision			
B- Safety and Emergency procedures			
Read and demonstrate an understanding of your Company's Fire and Safety Regulations			
Demonstrate recognition of the alarm for: <ul style="list-style-type: none"> • FIRE • EMERGENCY • ABANDON SHIP 			
Locate medical and first aid equipment			
Locate fire-fighting equipment: alarm activating points, alarm bells, extinguishers, hydrants, breathing apparatus, fire-fighter's outfits and hoses			
Locate rocket line throwing apparatus			
Locate distress rockets, flares and other pyrotechnics			

CONTINUE - FAMILIARISE THE SHIPBOARD as required by Regulation 1/14 of the STCW Convention

Ship's Name			
Task/Duty	Training Officer	Sign	Date
B- (Continue) Safety and Emergency procedures			
Locate breathing apparatus and firefighter's outfits, etc.			
Locate EPIRB, SART and VHF radios for use in emergency			
Locate Emergency Escape Breathing Devices (EEBD's)			
Locate CO2 bottle room, and release points and control valves for machinery spaces, engine room, pump rooms, cargo tanks and holds			
Locate and understand the operation of the emergency fire pump			
Discuss reasons for the provision of 'International Shore Coupling'			
Demonstrate the significance and contents of 'Fire Control Plan', describe how to keep the Fire Control Plan updated at all times.			
C- Environmental Protection			
Understudy the procedure for handling garbage, rubbish, and other wastes			
Understudy the use of garbage compactor or other equipment as appropriate			
Understanding the use of Anti-Pollution equipment and chemicals			

BOAT AND MUSTER STATIONS

Fill in Boat and Fire Muster Stations and other details in the following table.

	FIRST SHIP	SECOND SHIP	THIRD SHIP	FOURTH SHIP	FIFTH SHIP	SIXTH SHIP
Ship's Name						
Boat Muster Station						
Fire Muster Station						
Master's Name						
Master's Signature						
Date						

SECTION 4 SHIPS PARTICULARS

Demonstrate understanding and knowledge of the ships on which you serve. Understanding particulars of ships will assist you in meeting this important requirement, the following particulars are to be recorded during the time spent on each ship.

FIRST SHIP

Mv/ss	IMO Number	Call Sign	
Dimensions and Capacities	Life-Saving Equipment	anchors (weight)	Navigational and Communications Equipment (make / Type)
Length overall m	Lifeboats (no.)	Port tons	Log
Breadthm	Life rafts (no.)	Starboard..... tons	EPIRB(No.)
Depth m	Capacity per boat (persons)	Speartons	Magnetic Compass
Summer draftm	Capacity per life raft (persons)	Cable mm	Gyro compass
Summer freeboard m	Lifebuoys (No)	Length shackles	Autopilot
Gross tonnage t	Survival Suits (no./type)	Cargo Handling Gear	Radar(s)
Deadweight t	Fire-Fighting Equipment	Derricks/cranes (no. and SWL)tones	ECDIS
Light displacementt	Fire extinguishers (no. and capacity)	Winches (types) tones	Echo sounder
Fresh Water Allowance Mm	Types: Water liters Foam	Cargo pumps (no.)	GPS
Immersion at load draft TP	Dry powder kg	Pipelines (sizes)	If applicable:
Trimming momentMCTC	CO..... kg	(type and rating) tones/hour	DP System
Grain/liquid capacity..... m ³	Fire hoses (no. and size) mm	Ballast pumps (no.)	SATCOM
Mooring ropes (number/diameter)	Breathing apparatus (make)	(type and rating) tones/hour	GMDSS equipment
Synthetic fibre mm	Fire-fighting Outfits (No)	Ballast tanks (no.)	Other navigational and communications equipment.
Wires mm		Other cargo equipment
Towing spring mm		
Fire wire mm		

THIRD SHIP

Mv/ss	IMO Number	Call Sign	
Dimensions and Capacities	Life-Saving Equipment	Anchor (weight)	Navigational and Communications Equipment (make / Type)
Length overall m	Lifeboats (no.)	Port tons	Log
Breadthm	Life rafts (no.)	Starboard..... tons	EPIRB(No.)
Depth m	Capacity per boat (persons)	Speartons	Magnetic Compass
Summer draftm	Capacity per life raft (persons)	Cable mm	Gyro compass
Summer freeboard m	Lifebuoys (No)	Length shackles	Autopilot
Gross tonnage t	Survival Suits (no./type)	Cargo Handling Gear	Radar(s)
Deadweight t	Fire-Fighting Equipment	Derricks/cranes (no. and SWL)tones	ECDIS
Light displacement.....t	Fire extinguishers (no. and capacity)	Winches (types) tones	Echo sounder
Fresh Water Allowance Mm	Types: Water liters Foam	Cargo pumps (no.)	GPS
Immersion at load draft TP	liters	Pipelines (sizes)	If applicable:
Trimming momentMCTC	Dry powder kg	(type and rating) tones/hour	DP System
Grain/liquid capacity. m ³	CO..... kg	Ballast pumps (no.)	SATCOM
Mooring ropes (number/diameter)	Fire hoses (no. and size) mm	(type and rating) tones/hour	GMDSS equipment
Synthetic fibre mm	Breathing apparatus (make)	Ballast tanks (no.)	Other navigational and communications equipment.
Wires mm	Fire-fighting Outfits (No)	Other cargo equipment
Towing spring mm	
Fire wire mm			

SECTION 5 INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT SEA (COLREGS), 1972

When cadets are assessed for certificates of competency, they will be required to demonstrate a thorough knowledge of the Rules and their application.

Parts A, B, C and E: A thorough knowledge of the rules is required. When the cadet can demonstrate knowledge and understanding of each rule and is also able to demonstrate a clear understanding of their use and application, the appropriate box should be initialed and dated by an officer.

Annex I

A general knowledge is required; but the provisions of Section 9 should be fully understood.

Annexes II and III

A general knowledge of these annexes is required.

Annex IV

A full and comprehensive knowledge of distress signals is required.

Part A General Rules			Part B Steering and Sailing Rules								
			Section 1			Section 2			Section 3		
Rules	Initials	Dates	Rules	Initials	Dates	Rules	Initials	Dates	Rules	Initials	Dates
1			4			11			19		
			5			12					
2			6			13					
			7			14					
3			8			15					
			9			16					
			10			17					
						18					
Part C Light and Shapes						Part D Sound and Light Signals			Part E Exceptions		
Rules	Initials	Dates	Rules	Initials	Dates	Rules	Initials	Dates	Rules	Initials	Dates
20			26			32			38		
21			27			33					
22			28			34					
23			29			35					
24			30			36					
25			31			37					

Annex I Light and Shapes/Technical Details						Annex II Additional Signals for fishing vessels		
Section	initials	Date	Section	initials	Date	Section	initials	Date
1			9a			All		
2			9b					
3			10			Annex III Sound Signal Appliance/ Technical Details		
4			11			Section	initials	Date
5			12			All		
6			13			Annex IV Distress Signals		
7			14			Section	initials	Date
8						All		

SECTION 6 INFORMATION ON TRAINING TASKS AND COMPETENCES TO BE ACHIEVED

This section of your Record Book offers details of the training tasks that cadet should follow to make best use of time at sea. Each page lists the tasks or duties that cadet should undertake. Completion of these will lead to meeting the competences.

A senior officer should review cadet progress, with initials and date twice upon tasks completion, cadet's performance is considered to meet the Assessment requirements and that competence has been demonstrated in that element. The officer may offer improvement recommendations if necessary. The competences required to qualify as a watchkeeping officer as tabulated in the STCW Code, International Guidelines issued by several maritime associations, Best Practices by Major Shipping Companies and Flag States additional requirements to STCW 2010 convention are listed below:

COMPETENCES FOR OFFICERS IN CHARGE OF A NAVIGATIONAL WATCH (STCW Code Table A-II/1) AND BEYOND

<p>Navigation at the Operational Level</p> <ol style="list-style-type: none"> 1. Plan and conduct a passage and determine position. 2. Maintain a safe navigational watch 3. Use of radar and ARPA to maintain the safety of navigation 4. Use of ECDIS to maintain the safety of navigation 5. Respond to emergencies 6. Respond to a distress signal at sea 7. Use of IMO Standard Marine Communication Phrases and use English in written and oral form 8. Transmit and receive information by visual signaling 9. Maneuver the ship <p>Cargo Handling and Stowage at the Operational Level</p> <ol style="list-style-type: none"> 10. Monitor the loading, stowage, securing care during the voyage and the unloading of cargoes <p>This book covers extra tasks for cadets (not mentioned in STCW code table A-II/1) whose training at sea includes experience on tankers</p>	<p>Security In compliance with ISPS Code</p> <ol style="list-style-type: none"> 11. Security Awareness <p>Cargo Handling and Stowage-Additional Tasks for Tankers</p> <ol style="list-style-type: none"> 12. Monitor loading of cargoes 13. Monitor discharging of cargoes 14. Maintain and overhaul cargo systems and associated equipment 15. Cargo operations <p>Controlling the Operation of the Ship and Care for Persons On-board at the Operational Level</p> <ol style="list-style-type: none"> 16. Ensure compliance with pollution prevention requirements 17. Maintain seaworthiness of the ship 18. Prevent, control and fight fires on board 19. Operate life-saving appliances 20. Apply medical first aid on board ship 21. Monitor compliance with legislative requirements 22. Application of leadership and team working skills
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EXAMPLE OF HOW TO COMPLETE THE LIST OF TRAINING TASKS AND COMPETENCES ACHIEVED

Competence: 1. Plan and conduct a passage and determine position							Competence Demonstrated Training Officer (Sign/date)	
1.2 - Adequate scale Charts selection							AMB	2/9/19
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Selecting charts with the largest scale suitable for the area of navigation and are corrected in accordance with the latest information available.</i>		Sign	Date	
				Improvement Recommendation				
<input checked="" type="checkbox"/>	AMB	2/9/19	1. Assist the navigating officer in the preparation of navigational passages and voyages	Practice in determining appropriate charts for a specific voyage	<input checked="" type="checkbox"/>	AMB	2/9/19	
<input checked="" type="checkbox"/>	AMB	3/9/19	2. Obtain and Apply information from the Temporary & Preliminary (T&P) notices as received on board		<input checked="" type="checkbox"/>	AMB	3/9/19	
<input checked="" type="checkbox"/>	AMB	4/9/19	3. Use chart catalogue to determine the correct charts for a specific voyage		<input type="checkbox"/>	AMB		

- The competencies are directly taken from the text of the STCW Code. Extra competences have been added as per International Guidelines issued by several maritime associations, Best Practices by Major Shipping Companies and Flag States additional requirements to STCW 2010 convention. By the end of the period of seagoing service the cadet should be recorded as being considered competent in as many of these competences as possible.
- The primary tasks are sub-divided into training tasks or duties. The cadet should complete as many of these training tasks as possible. It should be noted that some of the skills and knowledge that underpin the competences may well have been obtained during shore-based training.
- Space is provided to record completion of each training task twice by the supervising officer. This does not mean that each task must be completed twice if, in the opinion of the officer, once is considered sufficient.
- The officer supervising the cadet does not necessarily have to be the designated training officer.
- Before competencies demonstrated are recorded the Master or Designated on board Training Officer may record any appropriate improvement recommendation about areas for improvement. A large blank space for this purpose is provided beneath the assessment requirements. As competence in this primary task is demonstrated, the appropriate box should be signed and dated by the Master or Designated Training Officer on Board the ship to attest that competence has been demonstrated.
- A cadet's attainment of the competence should only be recorded as "Competence demonstrated" when the Master or designated training officer is satisfied that the cadet can perform the duty without supervision or, where appropriate, that the cadet is able to supervise others in the performance of the duty.
- When recording competence demonstrated careful account should be taken of the assessment requirement contained in the table, as well as the best practices of seafarers and good safe working practices.

SECTION 7 TASKS FOR OFFICER IN CHARGE OF A NAVIGATIONAL WATCH

The instruction in this portion of this record book includes the qualification criteria for the officers in charge of a navigational watch, read as follows:

Ordinance II / I

Mandatory minimum certification requirements for officers in charge of navigational watch on ships of 500 gross tonnage or greater

1. Any officer responsible for a navigational watch operating on a seagoing ship of 500 gross tonnage or more shall possess a Certificate of Competence.
2. Each Certification Candidate shall:
 - 1) Be older than 18 years old;
 - 2) Have an approved seagoing service of not less than 12 months as part of an authorized training program that requires on board training, that meets the criteria of Section A-II / I of the STCW code and is recorded in an approved training record book or otherwise has approved seagoing service of not less than 36 months;
 - 3) Have performed, during the requisite seagoing service, the tasks of bridge watch keeping under the guidance of the master or trained officer for minimum six months;
 - 4) Comply, as necessary, with the relevant conditions of the Regulations set out in Chapter IV for the execution of specified radio duties in compliance with the Radio Regulations;
 - 5) Comply with the requirements of competence set out in Section A-II / I of the STCW Code; and have completed approved education and training
 - 6) Meet the requirements of competence set out in Section A-VI / I, paragraph 2, Section A-VI/2, paragraphs 1 to 4, Section A-VI/3, paragraphs 1 to 4 and Section A-VI/4, paragraphs 1 to 3 of the STCW Code.

TRAINING TASKS

Competence: 1. Plan and conduct a passage and determine position					Competence Demonstrated Training Officer (Sign/date)		
1.1 - Identify conspicuous objects and other terrestrial/celestial aids to navigation in daylight and at night.							
Completi on of Task	Training Officer		Task/Duty	Assessment Requirements	Completi on of Task	Training Officer	
	Sign	Date		<i>Compliance of the planned voyage with guidance in relevant nautical publications.</i>		Sign	Date
			Improvement Recommendation				
<input type="checkbox"/>			1. Illustrate an understanding of the chart folio system and assist in correcting charts and other publications. Demonstrate how to make entries of chart correction updates and new chart orders on the chart correction folio		<input type="checkbox"/>		
<input type="checkbox"/>			2. Illustrate an understanding of the contents and usage of Notice to Mariners		<input type="checkbox"/>		
<input type="checkbox"/>			3. Under supervision demonstrate correction of charts using NtM (Notices to Mariners) and or tracings		<input type="checkbox"/>		
<input type="checkbox"/>			4. Illustrate an understanding of the contents and usage of Sailing Directions and vessel's routing information. (Demonstrate correct use of Ocean passages for routing purposes)		<input type="checkbox"/>		

Competence: 1. Plan and conduct a passage and determine position						Competence Demonstrated Training Officer (Sign/date)	
1.1 – (Continue) Identify conspicuous objects and other terrestrial/celestial aids to navigation in daylight and at night.							
Completi on of Task	Training Officer		Task/Duty	Assessment Requirements	Completi on of Task	Training Officer	
	Sign	Date		<i>Compliance of the planned voyage with guidance in relevant nautical publications.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			5. Illustrate an understanding of the contents and usage of List of fog and lights signals		<input type="checkbox"/>		
<input type="checkbox"/>			6. Illustrate an understanding of the contents and usage of Tidal stream, Tide Tables and Current Atlases		<input type="checkbox"/>		
<input type="checkbox"/>			7. Illustrate an understanding of the contents and usage of Pilot's Book. (Select the relevant information on Port Radio and Pilot Stations from the Admiralty List of Radio Signals (ALRS)		<input type="checkbox"/>		
<input type="checkbox"/>			8. Illustrate an understanding of the contents and usage of Warnings of Radio Navigation		<input type="checkbox"/>		
<input type="checkbox"/>			9. Identify shapes and signs on nautical chart with reference to NP 5011		<input type="checkbox"/>		

Competence: 1. Plan and conduct a passage and determine position						Competence Demonstrated Training Officer (Sign/date)	
1.2 - Adequate scale Charts selection							
Completi on of Task	Training Officer		Task/Duty	Assessment Requirements	Completi on of Task	Training Officer	
	Sign	Date		<i>Selecting charts with the largest scale suitable for the area of navigation and are corrected in accordance with the latest information available.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Assist the navigating officer in the preparation of navigational passages and voyages		<input type="checkbox"/>		
<input type="checkbox"/>			2. Obtain and Apply information from the Temporary & Preliminary (T&P) notices as received on board		<input type="checkbox"/>		
<input type="checkbox"/>			3. Use chart catalogue to determine the correct charts for a specific voyage		<input type="checkbox"/>		
<input type="checkbox"/>			4. Select appropriate scale chart from electronic chart display and information system or paper chart portfolio and electronic chart system		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate an understanding, with reasons, precautionary measures and checks to make when using local charts (in lieu of BA charts)		<input type="checkbox"/>		

Competence: 1. Plan and conduct a passage and determine position						Competence Demonstrated Training Officer (Sign/date)	
1.3 – Courses setting							
Completi on of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completi on of Task	<u>Training Officer</u>	
	Sign	Date		<i>Setting Courses suitably with respect of the ship's size, draft and maneuverability, and set with sufficient distance off shallow waters, banks and other dangers to navigation. Due consideration is taken of currents, ice and prevailing weather conditions.</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Illustrate the use of the compass when setting the course		<input type="checkbox"/>		
<input type="checkbox"/>			2. Setting up the course recorder		<input type="checkbox"/>		
<input type="checkbox"/>			3. Estimate and make allowance for tidal currents and leeway		<input type="checkbox"/>		
<input type="checkbox"/>			4. Practice the calculation of the tidal		<input type="checkbox"/>		
<input type="checkbox"/>			5. Illustrate how to transfer courses from Gnomonic to Mercator charts		<input type="checkbox"/>		
1.4 - Calculating Estimated Time of Arrival (ETA).				<i>Correctly state the total distance, and ETA given within acceptable time limits.</i>	<input type="checkbox"/>		
<input type="checkbox"/>			1. Practice formulas for distance, average speed, and course made good, set and drift, ETA		<input type="checkbox"/>		

Competence: 1. Plan and conduct a passage and determine position						Competence Demonstrated Training Officer (Sign/date)	
1.5 - Determine and apply compass error for compass bearing and courses.							
Completi on of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completi on of Task	<u>Training Officer</u>	
	Sign	Date		<i>Errors in magnetic and gyro compasses are determined and applied properly to the courses and bearings</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Set magnetic variation and deviation		<input type="checkbox"/>		
<input type="checkbox"/>			2. Practice use of the azimuth mirror		<input type="checkbox"/>		
<input type="checkbox"/>			3. Azimuth practicing		<input type="checkbox"/>		
<input type="checkbox"/>			4. Amplitudes practicing		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate the use and make entries in the compass error book		<input type="checkbox"/>		

Competence: 1. Plan and conduct a passage and determine position						Competence Demonstrated Training Officer (Sign/date)	
1.6 - Recognize terrestrial/celestial aids and conspicuous objects to navigation in daylight and at night.							
Completi on of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completi on of Task	<u>Training Officer</u>	
	Sign	Date		<i>When visibility allows, sufficient objects or aids are identified to determine the position of the vessel safely.</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. look-out duties are performed and objects in degrees or points of the bow are reported		<input type="checkbox"/>		
<input type="checkbox"/>			2. Identifying navigation aids, including signposts, buoys and lighthouses		<input type="checkbox"/>		
<input type="checkbox"/>			3. learn to use Star finder and identify stars constellations and stars of first magnitude		<input type="checkbox"/>		
<input type="checkbox"/>			4. Determine position of vessel using terrestrial landmarks (landmarks, aids to navigation including lighthouses, beacons, and buoys)		<input type="checkbox"/>		
<input type="checkbox"/>			5. Determine compass bearing and visual fixes		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge of the IALA system of buoyage		<input type="checkbox"/>		

Competence: 1. Plan and conduct a passage and determine position						Competence Demonstrated Training Officer (Sign/date)	
1.7 - Use sextant and azimuth mirror to fix vessel's position by celestial and terrestrial observations.							
Completi n of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completi n of Task	<u>Training Officer</u>	
	Sign	Date		<i>The equipment is carefully tested and applied. And the most probable fix position is given.</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Using azimuth mirror to fix vessel's position		<input type="checkbox"/>		
<input type="checkbox"/>			2. Using a sextant and demonstrating how to identify and remove errors		<input type="checkbox"/>		
<input type="checkbox"/>			3. Practicing horizontal & vertical sextant angles		<input type="checkbox"/>		
<input type="checkbox"/>			4. Practicing noon calculations: distance, average speed, course made good, set and drift, ETA		<input type="checkbox"/>		

Competence: 1. Plan and conduct a passage and determine position						Competence Demonstrated Training Officer (Sign/date)	
1.8 – State vessel’s position by dead reckoning.							
Completi on of Task	Training Officer		Task/Duty	Assessment Requirements	Completi on of Task	Training Officer	
	Sign	Date		<i>Calculations are performed correctly and appropriate judgment is illustrated when applying the effect of winds, tides, currents and the estimation of vessel speed</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Estimate and make allowance for tidal currents and leeway		<input type="checkbox"/>		
<input type="checkbox"/>			2. Practice calculating tidal		<input type="checkbox"/>		
<input type="checkbox"/>			3. Calculate set and drift, and apply to maintain the vessel on its intended track		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate how to measure (by using a divider) distances between two positions on a small-scale chart		<input type="checkbox"/>		

Competence: 1. Plan and conduct a passage and determine position							Competence Demonstrated Training Officer (Sign/date)	
1.9 – Operating all electronic navigational equipment required to be carried on the vessel and applying the information obtained to ascertain the vessel’s position.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>The performance checks and equipment testing are carried out sufficiently. The most relevant equipment is used to obtain a reliable fix. The position is stated with due precaution and the accuracy of the fix within the limits given by the manufacturers.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Start practicing: Switching on Radar and set up procedure		<input type="checkbox"/>			
<input type="checkbox"/>			2. Plotting Radar		<input type="checkbox"/>			
<input type="checkbox"/>			3. Radar Fixes		<input type="checkbox"/>			
<input type="checkbox"/>			4. Indexing in parallel		<input type="checkbox"/>			
<input type="checkbox"/>			5. ARPA practice		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate knowledge of the limitations of Radar		<input type="checkbox"/>			
<input type="checkbox"/>			7. Under supervision set up the radar for optimum picture quality & detection capability Demonstrate the use of radar during watch-keeping Under supervision demonstrate the set up and use of ARPA for anti-collision purpose		<input type="checkbox"/>			
<input type="checkbox"/>			8. Demonstrate setting up AIS and input vessels data under supervision. Read static and dynamic data of other vessels		<input type="checkbox"/>			

Competence: 1. Plan and conduct a passage and determine position

1.9 – (Continue) Operating all electronic navigational equipment required to be carried on the vessel and applying the information obtained to ascertain the vessel’s position.

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The performance checks and equipment testing are carried out sufficiently. The most relevant equipment is used to obtain a reliable fix. The position is stated with due precaution and the accuracy of the fix within the limits given by the manufacturers.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			9. Understand capabilities and other uses of AIS		<input type="checkbox"/>		
<input type="checkbox"/>			10. Distance/speed recorders operating		<input type="checkbox"/>		
<input type="checkbox"/>			11. Practicing of satellite navigation set up procedure		<input type="checkbox"/>		
<input type="checkbox"/>			12. Use of any correction tables		<input type="checkbox"/>		
<input type="checkbox"/>			13. Applying applicable corrections and fixes by satellite navigation (GPS)		<input type="checkbox"/>		
<input type="checkbox"/>			14. Compare a plan generated by use of electronic systems with a manually developed passage plan		<input type="checkbox"/>		
<input type="checkbox"/>			15. Use and set up ECDIS or ECS as an aid to navigation		<input type="checkbox"/>		
<input type="checkbox"/>			16. Under supervision from the OOW set up a GPS for an intended voyage		<input type="checkbox"/>		

Competence: 1. Plan and conduct a passage and determine position							Competence Demonstrated Training Officer (Sign/date)	
1.10 – Determine the most probable position of the ship by observing the sun, stars or planets								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Acceptable accuracy and due regard the fix is taken to possible errors of the position lines and the meteorological conditions.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Distinguish stars of the first magnitude		<input type="checkbox"/>			
<input type="checkbox"/>			2. Illustrate chronometer use		<input type="checkbox"/>			
<input type="checkbox"/>			3. Show understanding of chronometer rate book usage		<input type="checkbox"/>			
<input type="checkbox"/>			4. Wind and rate a chronometer and check other clocks		<input type="checkbox"/>			
<input type="checkbox"/>			5. Calculate true wind from anemometer observation		<input type="checkbox"/>			
<input type="checkbox"/>			6. Sun sights practicing		<input type="checkbox"/>			
<input type="checkbox"/>			7. Predict the approximate position of the low pressure using the Buys Ballot's law		<input type="checkbox"/>			

Competence: 2. Maintain a safe navigation watch.							Competence Demonstrated Training Officer (Sign/date)	
2.1 - On preparing for sea, vessel's draft checking, the necessary bridge equipment is operating and that proper sailing information is available.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>All navigational and communication equipment is operating and all appropriate charts, weather information and tidal are available.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Insert data in the bridge movement book, and understand the importance of it. Synchronize bridge and engine room clocks		<input type="checkbox"/>			
<input type="checkbox"/>			2. Test alarm systems and se internal communications		<input type="checkbox"/>			
<input type="checkbox"/>			3. Read the draught on arrival and departure and check freeboard		<input type="checkbox"/>			
<input type="checkbox"/>			4. When fitted, check and calibrate the draught gauges		<input type="checkbox"/>			
<input type="checkbox"/>			5. Calculate dock water allowance and take dock water density		<input type="checkbox"/>			
<input type="checkbox"/>			6. Prior to departure, Assist in checking communication systems, bridge steering control equipment, and all other navigational aids		<input type="checkbox"/>			
<input type="checkbox"/>			7. Ensure the vessel is all secure to proceed to sea by prior to sailing vessel inspection		<input type="checkbox"/>			

Competence: 2. Maintain a safe navigation watch.							Competence Demonstrated Training Officer (Sign/date)	
2.2 - Notify the master/engine room as appropriate on leaving or entering port and assist in carrying out the master's pilot's orders/directions while monitoring the course, position and speed								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Clear and understood Communications. Correct lights, flags, shapes and sound signals are displayed. The pilot's safety is ensured when boarding and disembarking. Pilot's instructions are verified and essential information recorded and relevant information given to those concerned. Ship's safety is constantly monitored and the candidate shown to be particularly vigilant and alert in confined waters. The crew is available for handling moorings/anchors when required.</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Rig pilot ladder, including pilot hoists (if fitted) under the supervision of an officer		<input type="checkbox"/>			
<input type="checkbox"/>			2. List measures to ensure pilot safety when embarking/disembarking by pilot ladder		<input type="checkbox"/>			
<input type="checkbox"/>			3. Operate telegraphs, whistles, phones, bridge devices, etc.		<input type="checkbox"/>			
<input type="checkbox"/>			4. Understanding the flag etiquette		<input type="checkbox"/>			
<input type="checkbox"/>			5. Understudy an officer on the bridge when vessel is entering and leaving port. Understand the duties of the Watch Officer when traveling with a pilot on board		<input type="checkbox"/>			
<input type="checkbox"/>			6. When the vessel enters and leaves the port. Spend at least two periods in the engine room (observing/assisting)		<input type="checkbox"/>			

Competence: 2. Maintain a safe navigation watch.						Competence Demonstrated Training Officer (Sign/date)	
2.3 – When commencing the watch ascertain vessel’s position, course and speed, and appraise the traffic situation and any hazards to navigation							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Carry out all checks promptly and correctly. State clearly that the situation is under full control when the watch is formally taken over.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Understand the safe keeping of a navigational watch constitutes		<input type="checkbox"/>		
<input type="checkbox"/>			2. Illustrate the appropriate procedure for managing a bridge watch		<input type="checkbox"/>		
<input type="checkbox"/>			3. Accompany the helmsman on rounds at sea.		<input type="checkbox"/>		
<input type="checkbox"/>			4. Accompany the helmsman on rounds at anchor ready for departure		<input type="checkbox"/>		
<input type="checkbox"/>			5. Accompany the helmsman on rounds in port		<input type="checkbox"/>		

Competence: 2. Maintain a safe navigation watch.							Competence Demonstrated Training Officer (Sign/date)	
2.4 – Priorities at sea the lookout, fix the vessel’s position regularly, assess risks of collision and/or grounding and take appropriate action								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Suitable teamwork is exercised and the vessel is never put into a situation of uncontrollable risk. All actions are in compliance with the basic principles to be observed in keeping a navigational watch and any potentially dangerous situation is not allowed to become critical. At an early stage the engine is prepared for use, assistance is called from master, lookout or helmsman.</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Illustrate an awareness of the principles of safe watchkeeping as detailed in the ICS Bridge Procedures Guide		<input type="checkbox"/>			
<input type="checkbox"/>			2. Carry out look out duties and report objects in degrees or point on the bow		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge of the need to maintain a visual look-out for small vessels and other floating objects that may not be visible by radar		<input type="checkbox"/>			
<input type="checkbox"/>			4. Understand the limitations of AIS as an aid to identification and it is not a collision avoidance system		<input type="checkbox"/>			
<input type="checkbox"/>			5. When dealing with traffic or hazards to navigation, understand the need to engage hand steering at an early stage		<input type="checkbox"/>			

Competence: 2. Maintain a safe navigation watch

2.4 – (Continue) Priorities at sea the lookout, fix the vessel’s position regularly, assess risks of collision and/or grounding and take appropriate action

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<p><i>Suitable teamwork is exercised and the vessel is never put into a situation of uncontrollable risk. All actions are in compliance with the basic principles to be observed in keeping a navigational watch and any potentially dangerous situation is not allowed to become critical. At an early stage the engine is prepared for use, assistance is called from master, lookout or helmsman.</i></p>		Sign	Date
<input type="checkbox"/>			6. Taking early action to avoid close quarters situations		<input type="checkbox"/>		
<input type="checkbox"/>			7. Understand the need to consider and analyze “what if?” scenarios before taking collision avoidance action		<input type="checkbox"/>		
<input type="checkbox"/>			8. Supervise ratings ability in Watchkeeping duties		<input type="checkbox"/>		
<input type="checkbox"/>			9. Assisting the watch officer in the anchor watch duties		<input type="checkbox"/>		
<input type="checkbox"/>			10. Read and understand the content and purpose of the Night Order Book. Recognize the necessity and significance of the Master’s Standing- and Night Orders		<input type="checkbox"/>		

Competence: 2. Maintain a safe navigation watch.							Competence Demonstrated Training Officer (Sign/date)	
2.5 – Adjust the vessel’s course and speed to the traffic, the meteorological conditions, and the waters.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Meteorological information is acquired proper actions taken, and correctly interpreted. The speed and mode of steering is suitable for the prevailing conditions</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Read the following: Barometer and derive a corrected barometric pressure		<input type="checkbox"/>			
<input type="checkbox"/>			2. Read the following: Barograph and obtain the barometric tendency		<input type="checkbox"/>			
<input type="checkbox"/>			3. Read the following: Hygrometer and Dew Point Calculation		<input type="checkbox"/>			
<input type="checkbox"/>			4. Obtain the temperature of the sea and air		<input type="checkbox"/>			
<input type="checkbox"/>			5. Estimate the wind direction, force, and sea state		<input type="checkbox"/>			
<input type="checkbox"/>			6. Identifying the main types of cloud		<input type="checkbox"/>			
<input type="checkbox"/>			7. Realize the need to adjust the speed and/or course in heavy seas		<input type="checkbox"/>			
<input type="checkbox"/>			8. Demonstrate ability to recognize the safety critical matters pertaining to the vessels navigation and position keeping that may need master’s presence on the bridge		<input type="checkbox"/>			

Competence: 2. Maintain a safe navigation watch.							Competence Demonstrated Training Officer (Sign/date)	
2.6 – Control and monitor navigational instruments and record relevant activities and incidents								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>All movements and activities related to the navigation of the ship are properly recorded. Compass errors and other instrument errors are regularly checked and correctly applied.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Completing watch entries in the deck logbook		<input type="checkbox"/>			
<input type="checkbox"/>			2. Operating echo sounder and analyzing obtained information.		<input type="checkbox"/>			
<input type="checkbox"/>			3. Set echo sounder alarm appropriate to passage. Determine the depths from the echo sounder, and apply for the Under-Keel Clearance (UKC)		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate how to change the paper of the echo sounder		<input type="checkbox"/>			
<input type="checkbox"/>			5. Operate passive radio equipment, NAVTEX where fitted		<input type="checkbox"/>			
<input type="checkbox"/>			6. Under supervision, set up the NAVTEX, List the types of messages that cannot be excluded from being received by the NAVTEX		<input type="checkbox"/>			
<input type="checkbox"/>			7. Demonstrate how to change the paper of the NAVTEX		<input type="checkbox"/>			
<input type="checkbox"/>			8. Operate passive radio equipment, Weather fax where fitted		<input type="checkbox"/>			

Competence: 3. Use of radar and ARPA to maintain safety of navigation							Competence Demonstrated Training Officer (Sign/date)	
3.1 – Perform operational checks and adjust the equipment to proper performance.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>The equipment is functioning properly according to the manufacturer’s specifications</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Practice radar system tests and set up procedure.		<input type="checkbox"/>			
<input type="checkbox"/>			2. Practice true motion display set-up procedures.		<input type="checkbox"/>			
<input type="checkbox"/>			3. The limitations of radar understanding.		<input type="checkbox"/>			
<input type="checkbox"/>			4. Illustrate an understanding of the information provided from Relative motion display		<input type="checkbox"/>			
<input type="checkbox"/>			5. Illustrate an understanding of the information provided from True motion display		<input type="checkbox"/>			
3.2 - Equipment usage to fix the vessel’s position.				<i>Correctly interpreted information obtained from the equipment and applied with due regard to the limitations of the equipment. The fix is correct and properly set out on the chart.</i>	<input type="checkbox"/>			
<input type="checkbox"/>			1. Fixes by radar practicing		<input type="checkbox"/>			
<input type="checkbox"/>			2. Cross-check visual fixes with fixes by radar		<input type="checkbox"/>			
<input type="checkbox"/>			3. Illustrate understanding of factors affecting performance and accuracy		<input type="checkbox"/>			

Competence: 3. Use of radar and ARPA to maintain safety of navigation							Competence Demonstrated Training Officer (Sign/date)	
3.3 – Operating ARPA and radar to detect any hazards for groundings, close quarter’s situation or collision with other vessels or objects and determine appropriate avoiding action.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Ascertained with sufficient accuracy to take appropriate action toward the course and speed of other vessels as well as time and distance of assumed closest approach to other vessels.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Practice determining TCPA and CPA		<input type="checkbox"/>			
<input type="checkbox"/>			2. Parallel index techniques practicing		<input type="checkbox"/>			
<input type="checkbox"/>			3. Illustrate understanding of the differences between ground and sea stabilization for ARPA		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate blind pilotage technique under supervision		<input type="checkbox"/>			
3.4 - Appropriate action taken to avoid accidents.				<i>Properly announced by signals all maneuvers carried out to maintain safe navigation, timely and decisively executed and in accordance with the International Regulations for Preventing Collisions at Sea</i>	<input type="checkbox"/>			
<input type="checkbox"/>			1. Practice plotting of radar targets		<input type="checkbox"/>			
<input type="checkbox"/>			2. Recommend appropriate avoiding action (true motion and relative motion display)		<input type="checkbox"/>			
<input type="checkbox"/>			3. Understand rate of turn information		<input type="checkbox"/>			

Competence: 4. Use of ECDIS to maintain the safety of navigation						Competence Demonstrated Training Officer (Sign/date)	
4.1 – ECDIS operations: Knowledge of the capability and limitations including a thorough understanding of Electronic Navigational Chart (ENC) data, data accuracy, presentation rules, display options and other chart data formats.							
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>Monitor ECDIS information in a manner that contributes to safe navigation</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Explain the difference between the “vector” chart and the "raster" chart		<input type="checkbox"/>		
<input type="checkbox"/>			2. Illustrate how to use ECDIS to interrogate the chart display and obtain chart details e.g., information on originator, edition number and update status		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate the difference between official ENCs and unofficial ENCs		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate how to keep ENCs and RNCs up to date		<input type="checkbox"/>		
<input type="checkbox"/>			5. Understand that the electronic chart system is also another navigation aid or tool		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate the factors in determining a safety contour and demonstrate how it is set		<input type="checkbox"/>		
<input type="checkbox"/>			7. Demonstrate the factors in determining a safe passing distance of charted hazards and demonstrate how it is set		<input type="checkbox"/>		
<input type="checkbox"/>			8. Discuss Explain factors affecting the quality of charts and survey data		<input type="checkbox"/>		

Competence: 4. Use of ECDIS to maintain the safety of navigation							Competence Demonstrated Training Officer (Sign/date)	
4.2 - ECDIS operations: Knowledge of the capability and limitations including the dangers of over-reliance								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Correctly interpreted and analyzed Information obtained from ECDIS (including radar overlay and/or radar tracking functions, when fitted), taking into account the limitations of the equipment, all connected sensors (including radar and AIS where interfaced), and prevailing circumstances and conditions.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Understand and illustrate that in comparison to the errors that may affect paper charts ECDIS may be subject to a different range of errors and anomalies requiring remedial measures.		<input type="checkbox"/>			
<input type="checkbox"/>			2. Understand that the voyage plan should include back up procedures and information on equipment status		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate that in accepting the watch, the officer reviews the voyage plan and agrees the selected pre-settings of functions, alarms and indicators to be used on ECDIS, Under supervision		<input type="checkbox"/>			
<input type="checkbox"/>			4. Understand the need to check validity of data by visually cross checking and regularly checking data sources		<input type="checkbox"/>			
<input type="checkbox"/>			5. Understand that the use of ECDIS does not release the navigator from managing and monitoring all data sources, and proper watchkeeping		<input type="checkbox"/>			

Competence: 4. Use of ECDIS to maintain the safety of navigation

4.2 - (Continue) ECDIS operations: Knowledge of the capability and limitations including the dangers of over-reliance

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Correctly interpreted and analyzed Information obtained from ECDIS (including radar overlay and/or radar tracking functions, when fitted), taking into account the limitations of the equipment, all connected sensors (including radar and AIS where interfaced), and prevailing circumstances and conditions.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			6. Understand that decision-making demands having situational awareness and sufficient relevant information		<input type="checkbox"/>		
<input type="checkbox"/>			7. Understand that due to information overload the watchkeepers' situational awareness may be impaired		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate an understanding that responding to changing traffic needs situational awareness		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate required actions to take in the event of main navigation systems' failure		<input type="checkbox"/>		

Competence: 4. Use of ECDIS to maintain the safety of navigation						Competence Demonstrated Training Officer (Sign/date)	
4.3 - ECDIS operations: Knowledge of the capability and limitations including familiarity with the functions of ECDIS required by performance standards in force							
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>Information obtained from ECDIS (including radar overlay and/or radar tracking functions, when fitted) is correctly interpreted and analyzed, taking into account the limitations of the equipment, all connected sensors (including radar and AIS where interfaced), and prevailing circumstances and conditions.</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Realize the danger to trust and too much reliance on whatever is on display in computer-based systems		<input type="checkbox"/>		
<input type="checkbox"/>			2. Cross check ECDIS information by other available means, especially by visual means and the use of radar		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate an understanding of the difference between primary position and secondary position source and how it is activated		<input type="checkbox"/>		
<input type="checkbox"/>			4. Understand the process for updating base charts and the display of update history		<input type="checkbox"/>		
<input type="checkbox"/>			5. Admit steam to a line or system, taking all precautions against thermal and pressure shock and avoiding water hammer		<input type="checkbox"/>		

Competence: 5. Respond to Emergencies							Competence Demonstrated Training Officer (Sign/date)	
5.1 – Description of the assigned duties laid down in the vessel’s contingency plans for emergencies.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Correct statements of assigned duties and include at least actions in the event of fire, heavy weather damage, collision, stranding, rescue of survivors, shipboard oil pollution and abandon vessel.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Participating in a fire drill at sea		<input type="checkbox"/>			
<input type="checkbox"/>			2. Participate in heavy weather damage emergency response exercise		<input type="checkbox"/>			
<input type="checkbox"/>			3. Participate in collision emergency response exercise		<input type="checkbox"/>			
<input type="checkbox"/>			4. Participate in recovery or rescue of in-water casualties/ survivors emergency response exercise		<input type="checkbox"/>			
<input type="checkbox"/>			5. Participate in person overboard emergency response exercise		<input type="checkbox"/>			
<input type="checkbox"/>			6. Participate in incident of ship’s oil pollution (at sea, at port) emergency response exercise		<input type="checkbox"/>			
<input type="checkbox"/>			7. Participate in steering failure emergency response exercise		<input type="checkbox"/>			
<input type="checkbox"/>			8. Participate in main engine failure emergency response exercise		<input type="checkbox"/>			
<input type="checkbox"/>			9. Participate in power failure emergency response exercise		<input type="checkbox"/>			
<input type="checkbox"/>			10. Participate in security alert emergency response exercise		<input type="checkbox"/>			
<input type="checkbox"/>			11. Participate in a lifeboat drill for abandon the vessel		<input type="checkbox"/>			

Competence: 5. Respond to Emergencies						Competence Demonstrated Training Officer (Sign/date)	
5.2 - In the event of an emergency, demonstrate ability to take initial actions							
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>Actions taken are in accordance with contingency plans. The type and scale of the simulated emergency is promptly identified.</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Participate in an emergency response drill for an unspecified emergency		<input type="checkbox"/>		
<input type="checkbox"/>			2. Changeover the normal steering control on the bridge to the emergency steering position		<input type="checkbox"/>		
<input type="checkbox"/>			3. Assist with the changeover from the bridge emergency steering position to the emergency system in the steering gear compartment and steer from this position		<input type="checkbox"/>		

Competence: 5. Respond to Emergencies							Competence Demonstrated Training Officer (Sign/date)	
5.3 – In the event of emergencies arise in port, demonstrate ability to act correctly.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Adequately assessed with the need for information and assistance from shore facilities and communication established with the proper authorities.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Prepare a list of emergency shore-side organizations: Port control, Fire, Police, Ambulances, and Tugs		<input type="checkbox"/>			
<input type="checkbox"/>			2. Participate in an emergency response drill in port for fire		<input type="checkbox"/>			
<input type="checkbox"/>			3. Participate in an emergency response drill in port for incident of pollution		<input type="checkbox"/>			
<input type="checkbox"/>			4. Illustrate the protocol for alerting port emergency services		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge of vessel’s shipboard marine pollution emergency plan and shipboard oil pollution emergency plan		<input type="checkbox"/>			

Competence: 6. Respond to a distress signal at sea.							Competence Demonstrated Training Officer (Sign/date)	
6.1 - Establish position of own vessel and the unit in distress.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Correctly plotted the positions on suitable charts.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Ensure that the competence 1.9 requirements are met		<input type="checkbox"/>			
<input type="checkbox"/>			2. Plot position from given for a vessel in distress and calculate distance, course and ETA		<input type="checkbox"/>			
<input type="checkbox"/>			3. Understand the designated radio operator duties and responsibilities in times of distress		<input type="checkbox"/>			
<input type="checkbox"/>			4. Operating GMDSS equipment on test		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate correct procedures and precautions to avoid raising false distress alerts on the GMDSS equipment, with special emphasis on the following: Safe handling procedures of equipment e.g., SART, EPIRB		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate correct procedures and precautions to avoid raising false distress alerts on the GMDSS equipment, with special emphasis on the following: Procedures to stop an inadvertently raised distress alert		<input type="checkbox"/>			
<input type="checkbox"/>			7. Practice the use of VHF and MF radiotelephone equipment using standard marine communication phrases		<input type="checkbox"/>			

Competence: 6. Respond to a distress signal at sea.							Competence Demonstrated Training Officer (Sign/date)	
6.2 – Carry out a preliminary assessment of the situation, suggest actions and inform the master.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Complying planned actions with IAMSAR Manual, and based on an assessment of the total situation including the type of emergency, distance to the unit in distress, other ships in the area, meteorological conditions and the possibilities for rendering the assistance needed.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Recognize emergency signals or distress		<input type="checkbox"/>			
<input type="checkbox"/>			2. Record distress signal received or sighted in Logbook		<input type="checkbox"/>			
<input type="checkbox"/>			3. Consult vessel's instructions and contingency plans		<input type="checkbox"/>			
<input type="checkbox"/>			4. Assist in preparing a contingency or response plans		<input type="checkbox"/>			
6.3 - Recording all incidents and actions taken and the master's decision.				<i>Properly recorded all vital information to support any subsequent debriefing.</i>	<input type="checkbox"/>			
<input type="checkbox"/>			1. Recording information in the Logbook		<input type="checkbox"/>			
<input type="checkbox"/>			2. Maintain proper records of actions taken and communications		<input type="checkbox"/>			

Competence: 7. Use IMO Standard Marine Communication Phrases and Use English in Written and Oral Form						Competence Demonstrated Training Officer (Sign/date)	
7.1 - Using IMO Standard Marine Communication Phrases.							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Navigation and safety communications are clear and well explained</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Using IMO Standard Marine Communication Phrases with other vessels		<input type="checkbox"/>		
<input type="checkbox"/>			2. Using IMO Standard Marine Communication Phrases with Coastal Stations		<input type="checkbox"/>		
7.2 - Fill in standard English forms and nautical reports and				<i>Correctly completed all reports and forms relevant to the duties of an officer in charge of a navigational watch</i>	<input type="checkbox"/>		
<input type="checkbox"/>			1. Maintain a port log in the English language		<input type="checkbox"/>		
<input type="checkbox"/>			2. Understand purpose of the deck logbook and complete watch entries in English		<input type="checkbox"/>		

Competence: 7. Use IMO Standard Marine Communication Phrases and Use English in Written and Oral Form							Competence Demonstrated Training Officer (Sign/date)	
7.3 - Use English nautical manuals and publications								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Correctly interpreted the English language nautical publications and manuals relevant to the navigation, Watchkeeping and safety of the ship.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Illustrate understanding of the content and use of Notices to Mariners		<input type="checkbox"/>			
<input type="checkbox"/>			2. Illustrate understanding of the content and use of Sailing directions and pilot books (Demonstrate ability to find specific port information from the Sailing Directions)		<input type="checkbox"/>			
<input type="checkbox"/>			3. Illustrate understanding of the content and use of lights and fog signals		<input type="checkbox"/>			
<input type="checkbox"/>			4. Illustrate understanding of the content and use of Tide Tables, Tidal Stream and Current Atlases.		<input type="checkbox"/>			
<input type="checkbox"/>			5. Illustrate understanding of the content and use of Meteorological and Marine Safety messages		<input type="checkbox"/>			
<input type="checkbox"/>			6. Illustrate understanding of the content and use of ship's routing information		<input type="checkbox"/>			
<input type="checkbox"/>			7. Illustrate understanding of the content and use of Radio Signals		<input type="checkbox"/>			
<input type="checkbox"/>			8. List the contents of Mariners Handbook, relevant to the planning of a passage		<input type="checkbox"/>			

Competence: 7. Use IMO Standard Marine Communication Phrases and Use English in Written and Oral Form							Competence Demonstrated Training Officer (Sign/date)	
7.4 - Communicate with watch members in safety related duties								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Correctly understood all orders and information related to operations and watchkeeping duties and acted upon by those concerned</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Illustrate the ability to communicate instructions to a multinational crew		<input type="checkbox"/>			
<input type="checkbox"/>			2. During mooring operations, show an ability to supervise ratings		<input type="checkbox"/>			
<input type="checkbox"/>			3. Keep engine room watches with each of the engineering watchkeeping officers for one week, i.e., two days on each of the three watches		<input type="checkbox"/>			
<input type="checkbox"/>			4. Using hand-held transceivers (walkie talkies)		<input type="checkbox"/>			
<input type="checkbox"/>			5. Observe a master-pilot information exchange concerning pilot's intentions, operational parameters, and ship's characteristics		<input type="checkbox"/>			
7.5 – Communicating with shore stations				<i>Reporting is in accordance with VTS procedure and with the general principles for ship routing systems.</i>	<input type="checkbox"/>			
<input type="checkbox"/>			1. Understand the purpose of IMO ships routing measures and traffic separation schemes		<input type="checkbox"/>			
<input type="checkbox"/>			2. Make reports to comply with ship reporting requirements, under supervision		<input type="checkbox"/>			
<input type="checkbox"/>			3. Understand purpose of vessel traffic services and where to find reporting requirements		<input type="checkbox"/>			

Competence: 8. Transmit and receive information by visual signaling						Competence Demonstrated Training Officer (Sign/date)	
8.1 – Transmit and receive Morse signals							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		Correctly interpreted a message given by maximum three flags and/or pennants		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Use Morse Code to send and receive letters, numbers and group SOS		<input type="checkbox"/>		
<input type="checkbox"/>			2. Understand maintenance and use of Aldis lamp and batteries		<input type="checkbox"/>		
8.2 - Use the International Code of Signals to interpret messages given by pennants and/or flags				<i>Maximum Three flags or pennants message is properly interpreted</i>	<input type="checkbox"/>		
<input type="checkbox"/>			1. Identify the International Code of Signals and the principal national flags		<input type="checkbox"/>		
<input type="checkbox"/>			2. Learn the meaning of single letter flag hoist		<input type="checkbox"/>		
<input type="checkbox"/>			3. Practice coding and decoding using the International Code of Signals		<input type="checkbox"/>		
<input type="checkbox"/>			4. Transmit / Receive Morse signal by Aldis Lamp		<input type="checkbox"/>		

Competence: 9. Maneuver the ship.							Competence Demonstrated Training Officer (Sign/date)	
9.1 - When maneuvering; use available information as to the vessel's turning circles and stopping distances.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Adequately used information during normal situations while taking due regard to draft, trim, wind and current. All maneuvers are safely carried out and any recommendation for tug assistance is backed by valid arguments.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Observe any system or steering limitations during normal maneuvers		<input type="checkbox"/>			
<input type="checkbox"/>			2. Observe any system or steering limitations during maneuvers		<input type="checkbox"/>			
<input type="checkbox"/>			3. Illustrate where to find maneuvering information		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate understanding of shallow water, squat, and similar effects		<input type="checkbox"/>			
<input type="checkbox"/>			5. Practice maneuvering the vessel under supervision, using the maneuvering board information		<input type="checkbox"/>			
<input type="checkbox"/>			6. Locate ship maneuvering data available from pilot card and discuss its importance for navigational purpose		<input type="checkbox"/>			
<input type="checkbox"/>			7. Observe rate of turn at different water depths and speeds		<input type="checkbox"/>			
<input type="checkbox"/>			8. Understand radius of a turning circles to mark wheel over position at any alteration point		<input type="checkbox"/>			

Competence: 9. Maneuver the ship.							Competence Demonstrated Training Officer (Sign/date)	
9.2 - Illustrate proper berthing and anchoring procedures.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Vessel is safely berthed and unberthed without undue delay. Anchors are lowered and moorings and manpower ready. Anchor, head ropes, stern ropes, breast ropes and springs are made fast or taken onboard as ordered.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. As a member of the team, assist in preparing for mooring (Heaving Lines, ropes, wires, stoppers, communications, lights, fenders, etc.)		<input type="checkbox"/>			
<input type="checkbox"/>			2. Discuss main considerations for arrival and departure stations, forward and aft		<input type="checkbox"/>			
<input type="checkbox"/>			3. Discuss main considerations for arrival and departure stations in wheelhouse		<input type="checkbox"/>			
<input type="checkbox"/>			4. Run off ropes stowed on the reels and flake out for use		<input type="checkbox"/>			
<input type="checkbox"/>			5. Understand the precautions for cold weather		<input type="checkbox"/>			
<input type="checkbox"/>			6. Operate winches and windlass under supervision		<input type="checkbox"/>			
<input type="checkbox"/>			7. Run, heave, stopper and turn up mooring lines under supervision		<input type="checkbox"/>			
<input type="checkbox"/>			8. Illustrate safe handling of moorings, with special attention to synthetic fiber ropes and self-tensioning winches		<input type="checkbox"/>			

Competence: 9. Maneuver the ship.

9.2 – (Continue) Illustrate proper berthing and anchoring procedures.

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Vessel is safely berthed and unberthed without undue delay. Anchors are lowered and moorings and manpower ready. Anchor, head ropes, stern ropes, breast ropes and springs are made fast or taken onboard as ordered.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			9. List the various types of mooring ropes and wires available onboard merchant vessels		<input type="checkbox"/>		
<input type="checkbox"/>			10. Discuss the dangers associated with usage of mixed moorings (mooring ropes/wires of different material) having the same lead		<input type="checkbox"/>		
<input type="checkbox"/>			11. Rig accommodation ladder and gangway under supervision		<input type="checkbox"/>		
<input type="checkbox"/>			12. Calibrate and check draft gauges when fitted		<input type="checkbox"/>		
<input type="checkbox"/>			13. Understudy an officer during mooring operations on the bridge		<input type="checkbox"/>		
<input type="checkbox"/>			14. Understudy an officer during mooring operations at mooring stations		<input type="checkbox"/>		
<input type="checkbox"/>			15. Anchoring: Discuss main considerations for anchor stations forward		<input type="checkbox"/>		
<input type="checkbox"/>			16. Anchoring: Discuss main considerations for anchor stations in wheelhouse		<input type="checkbox"/>		

Competence: 9. Maneuver the ship.

9.2 – (Continue) Illustrate proper berthing and anchoring procedures.

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Vessel is safely berthed and unberthed without undue delay. Anchors are lowered and moorings and manpower ready. Anchor, head ropes, stern ropes, breast ropes and springs are made fast or taken onboard as ordered.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			17. Understudy an officer during mooring operations at Securing tugs		<input type="checkbox"/>		
<input type="checkbox"/>			18. Demonstrate knowledge of the shackle markings on anchor cables		<input type="checkbox"/>		
<input type="checkbox"/>			19. Assist in preparing anchors prior to letting go.		<input type="checkbox"/>		
<input type="checkbox"/>			20. Securing and weighing anchors for sea passage		<input type="checkbox"/>		
<input type="checkbox"/>			21. Inspect Chain lockers, peak tanks, and other forward compartments, under supervision		<input type="checkbox"/>		
<input type="checkbox"/>			22. Preparing an anchor and let it go		<input type="checkbox"/>		
<input type="checkbox"/>			23. Weigh the anchor, inspect for damage and fouling, and secure		<input type="checkbox"/>		
<input type="checkbox"/>			24. Supervise the stowage of ropes used in mooring operations		<input type="checkbox"/>		
<input type="checkbox"/>			25. Safe rat-guards		<input type="checkbox"/>		

Competence: 9. Maneuver the ship.							Competence Demonstrated Training Officer (Sign/date)	
9.3 – A man Overboard rescue maneuver								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>The maneuver brings the ship into its wake, and the actions taken are as generally recommended</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. As a member of the team, participate in a person overboard exercise		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate an awareness of the ship maneuver turns in the IAMSAR manual Vol. III for positioning the vessel to recover a person overboard		<input type="checkbox"/>			

FUNCTION: CARGO HANDLING AND STOWAGE AT THE OPERATIONAL LEVEL

TRAINING TASKS

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.							Competence Demonstrated Training Officer (Sign/date)	
10.1 - Supervising the preparation of holds and deep tanks for loading.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<p><i>Precautions to ensure safe atmosphere have been taken before entering holds or confined spaces. The holds and deep tanks are in good order and condition, sufficiently cleaned and adequately dunnage for the cargo. Any heating arrangements are functioning. The bilges are dry and there is free drainage to the suctions.</i></p>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Illustrate and understanding of the safe handling of hatch covers, including mechanical hatch covers		<input type="checkbox"/>			
<input type="checkbox"/>			2. Assist in the general preparation of the holds, and including cargo dunnage laying		<input type="checkbox"/>			
<input type="checkbox"/>			3. Calculate available spaces capacity for the cargo		<input type="checkbox"/>			
<input type="checkbox"/>			4. Prepare and clean bilges, wells, and strum boxes		<input type="checkbox"/>			

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.

10.1 – (Continue) Supervising the preparation of holds and deep tanks for loading.

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Precautions to ensure safe atmosphere have been taken before entering holds or confined spaces. The holds and deep tanks are in good order and condition, sufficiently cleaned and adequately dunnage for the cargo. Any heating arrangements are functioning. The bilges are dry and there is free drainage to the suctions.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			5. Holds scuppers test		<input type="checkbox"/>		
<input type="checkbox"/>			6. Bilge suctions test		<input type="checkbox"/>		
<input type="checkbox"/>			7. Assist with opening up, overhauling, and testing a non-return valve		<input type="checkbox"/>		
<input type="checkbox"/>			8. Observe and understudy the deck officer while supervising a tank cleaning operation		<input type="checkbox"/>		
<input type="checkbox"/>			9. Use check list for enclosed-space entry		<input type="checkbox"/>		
<input type="checkbox"/>			10. Inspecting freshwater tanks		<input type="checkbox"/>		

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.						Competence Demonstrated Training Officer (Sign/date)	
10.2 - Supervise the vessel's cargo gear operation							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Operated the gear safely and the safe working load never exceeded. Damaged or worn-out ropes, wires or parts of the gear are detected and replaced.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Knots, bends, hitches and whipping practice		<input type="checkbox"/>		
<input type="checkbox"/>			2. Splicing ropes and wires practice		<input type="checkbox"/>		
<input type="checkbox"/>			3. Identify the types and uses of ropes and wires		<input type="checkbox"/>		
<input type="checkbox"/>			4. Break out the new rope and wire coils		<input type="checkbox"/>		
<input type="checkbox"/>			5. Stow wires and ropes with due consideration to their preservation		<input type="checkbox"/>		

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.

10.2 – (Continue) Supervise the vessel’s cargo gear operation

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Operated the gear safely and the safe working load never exceeded. Damaged or worn-out ropes, wires or parts of the gear are detected and replaced.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			6. Assist in the rigging of heavy lift derricks, as a team member		<input type="checkbox"/>		
<input type="checkbox"/>			7. Safety inspection for holds, with special regard to hatch boards, ladders, guard wires and stanchions, permanent dunnage, beams and beam bolts, lighting, and accesses		<input type="checkbox"/>		
<input type="checkbox"/>			8. Assisting with rigging clusters and portable lights		<input type="checkbox"/>		
<input type="checkbox"/>			9. With consideration to safety, start, operate, and assist with the routine maintenance of winches		<input type="checkbox"/>		
<input type="checkbox"/>			10. With consideration to safety, start, operate, and assist with the routine maintenance of derricks/cranes.		<input type="checkbox"/>		
<input type="checkbox"/>			11. Assist in cranes and derricks topping and lowering		<input type="checkbox"/>		

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.							Competence Demonstrated Training Officer (Sign/date)	
10.3 – Supervising the loading								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Maintaining proper trim and stability at all times while the cargo is loaded in accordance with the cargo plan. Dangerous goods are detected and treated in accordance with international rules and available guidance. Any incidents or accidents during loading are reported immediately and proper actions taken.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Assisting in supervising loading of cargo		<input type="checkbox"/>			
<input type="checkbox"/>			2. Assisting in cargo documentation		<input type="checkbox"/>			
<input type="checkbox"/>			3. According to the IMDG Code, check that dangerous goods are being stowed correctly		<input type="checkbox"/>			
<input type="checkbox"/>			4. Assist the chief officer with testing and verification of bulk cargo moisture content and reporting findings to the master		<input type="checkbox"/>			
<input type="checkbox"/>			5. During loading operation, inspect cargo gear		<input type="checkbox"/>			
<input type="checkbox"/>			6. Assist with Cargo separation		<input type="checkbox"/>			

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.

10.3 – (Continue) Supervising the loading

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Maintaining proper trim and stability at all times while the cargo is loaded in accordance with the cargo plan. Dangerous goods are detected and treated in accordance with international rules and available guidance. Any incidents or accidents during loading are reported immediately and proper actions taken.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			7. Cargo plans - preparation and interpreting		<input type="checkbox"/>		
<input type="checkbox"/>			8. Locate and consult the Cargo Securing Manual		<input type="checkbox"/>		
<input type="checkbox"/>			9. Calculate cargo loaded stability and loading stresses using stress diagrams, stress indicators or loading computers Understand the reasons to maintain a minimum positive GM of the vessel at all times		<input type="checkbox"/>		
<input type="checkbox"/>			10. Discuss the effects of the following on the behavior of the vessel, whilst at sea Large GM (Stiff ship)		<input type="checkbox"/>		
<input type="checkbox"/>			11. Discuss the effects of the following on the behavior of the vessel, whilst at sea Small GM (Tender ship)		<input type="checkbox"/>		
<input type="checkbox"/>			12. Have a basic understanding of shear force and bending moments, and explain the importance of keeping them within limits for “At Sea” and “Harbour” conditions		<input type="checkbox"/>		

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.

10.3 – (Continue) Supervising the loading

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Maintaining proper trim and stability at all times while the cargo is loaded in accordance with the cargo plan. Dangerous goods are detected and treated in accordance with international rules and available guidance. Any incidents or accidents during loading are reported immediately and proper actions taken.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			13. Understudying a deck officer during loading of bulk cargoes to ensure correct cargo distribution and prevent excessive point loadings		<input type="checkbox"/>		
<input type="checkbox"/>			14. Sketching and interpreting the markings on four different types of containers (CTUs)		<input type="checkbox"/>		
<input type="checkbox"/>			15. Demonstrate knowledge of the different kinds of containers		<input type="checkbox"/>		
<input type="checkbox"/>			16. Demonstrate knowledge of the correct methods of handling containers		<input type="checkbox"/>		
<input type="checkbox"/>			17. Identify the markings on containers		<input type="checkbox"/>		
<input type="checkbox"/>			18. Assist in receiving, inspecting, and stowing vessel's stores		<input type="checkbox"/>		

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.

10.3 – (Continue) Supervising the loading

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Maintaining proper trim and stability at all times while the cargo is loaded in accordance with the cargo plan. Dangerous goods are detected and treated in accordance with international rules and available guidance. Any incidents or accidents during loading are reported immediately and proper actions taken.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			19. Assist in taking on fresh water		<input type="checkbox"/>		
<input type="checkbox"/>			20. Understanding the importance of monitoring moisture content and correct loading of fine bulk cargoes with respect to cargo liquefaction		<input type="checkbox"/>		
<input type="checkbox"/>			21. Assisting the chief officer in calculating and confirming cargo loaded against the total given by the terminal and reporting any discrepancies to the master		<input type="checkbox"/>		

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.							Competence Demonstrated Training Officer (Sign/date)	
10.4 - Ensuring a solid stow and securing of all cargoes in packaged form.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Special attention is paid to dangerous goods, heavy loads and vehicles. Cargoes liable to slide during rolling or pitching are adequately stowed and secured to avoid damage to ship and cargo.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Assist with securing cargo, stowed below the deck		<input type="checkbox"/>			
<input type="checkbox"/>			2. Assist with securing cargo, stowed on the deck		<input type="checkbox"/>			
<input type="checkbox"/>			3. Ensure securing containers		<input type="checkbox"/>			
<input type="checkbox"/>			4. Check lashings on deck containers		<input type="checkbox"/>			
<input type="checkbox"/>			5. Check the break bulk cargo lashings stowed on open flats		<input type="checkbox"/>			
10.5 - If required, ensure separation between bulk cargoes or packaged goods.				<i>All cargoes are delivered at the due port. And the cargoes are not mixed or contaminated.</i>	<input type="checkbox"/>			
<input type="checkbox"/>			1. Assist with cargo separation		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge of the reasons for separation of cargo parcels		<input type="checkbox"/>			

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.							Competence Demonstrated Training Officer (Sign/date)	
10.6 - Supervise to ensure that necessary precautions are taken to ensure ventilation and facilitate inspections during the voyage.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Ventilator fans were operated</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Assist in controlling the ventilation and temperature of the cargo		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate how to operate the p/v valves, Compare and contrast between the following arrangements of venting systems, with special regard to cargo vapor contamination: Independent Venting System		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate how to operate the p/v valves, Compare and contrast between the following arrangements of venting systems, with special regard to cargo vapor contamination: Combined or Common venting system		<input type="checkbox"/>			
<input type="checkbox"/>			4. Describe the function of the p/v breaker and items to monitor during cargo operation		<input type="checkbox"/>			
<input type="checkbox"/>			5. Ventilators trimming		<input type="checkbox"/>			
<input type="checkbox"/>			6. Ventilator fans operating		<input type="checkbox"/>			

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.							Competence Demonstrated Training Officer (Sign/date)	
10.7 - Using the International Maritime Dangerous Goods (IMDG) Code.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>The handling of dangerous and harmful cargoes is in complies with international regulations and recognized standards and codes of safe practice.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Markings and labels that indicate stores or cargoes are classified as dangerous goods		<input type="checkbox"/>			
<input type="checkbox"/>			2. Compile a list of all dangerous goods containers with their IMO classification and storage position		<input type="checkbox"/>			
<input type="checkbox"/>			3. Illustrate how the IMDG Code identifies the product and handling procedures		<input type="checkbox"/>			
<input type="checkbox"/>			4. Define the procedure to be taken in the event of leakage of dangerous, hazardous or harmful stores or cargoes		<input type="checkbox"/>			
<input type="checkbox"/>			5. Realize the reasons and need for separation of dangerous, hazardous and harmful stores or cargoes		<input type="checkbox"/>			
<input type="checkbox"/>			6. Recognize the importance of securing dangerous goods and securing adjacent cargoes		<input type="checkbox"/>			
<input type="checkbox"/>			7. Inspect container security seals are not tampered with and intact		<input type="checkbox"/>			
<input type="checkbox"/>			8. Illustrate the significance of the Flashpoint with regards to tanker operations		<input type="checkbox"/>			
<input type="checkbox"/>			9. Illustrate the significance of the Volatility with regards to tanker operations		<input type="checkbox"/>			

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.

10.7 – (Continue) Using the International Maritime Dangerous Goods (IMDG) Code

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The handling of dangerous and harmful cargoes is in complies with international regulations and recognized standards and codes of safe practice.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			10. Illustrate the significance of the Saturated Vapor pressure with regards to tanker operations		<input type="checkbox"/>		
<input type="checkbox"/>			11. Illustrate the significance of the Vapor Pressure and temperature relationship with regards to tanker operations		<input type="checkbox"/>		
<input type="checkbox"/>			12. Illustrate the Flammable zone with reference to the flammability diagram		<input type="checkbox"/>		
<input type="checkbox"/>			13. Illustrate the Upper Flammable / Explosive Limit (UFL/UEL) with reference to the flammability diagram		<input type="checkbox"/>		
<input type="checkbox"/>			14. Illustrate the Lower Flammable / Explosive Limit (LFL/LEL) with reference to the flammability diagram		<input type="checkbox"/>		
<input type="checkbox"/>			15. Illustrate the Consequences of mixing air into a cargo space having a flammable atmosphere with reference to the flammability diagram		<input type="checkbox"/>		
<input type="checkbox"/>			16. List information that can be obtained from Material Safety Data Sheets (MSDS)		<input type="checkbox"/>		
<input type="checkbox"/>			17. List information that can be obtained from Cargo Data Sheets (CDS)		<input type="checkbox"/>		

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.							Competence Demonstrated Training Officer (Sign/date)	
10.8 - Regular intervals for cargo inspections								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Carried out inspections in accordance with company's standing orders and procedures.</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Check connection of refrigerated containers to vessel's support systems and record daily readings		<input type="checkbox"/>			
<input type="checkbox"/>			2. Observe and understudy the watch officer on rounds		<input type="checkbox"/>			
<input type="checkbox"/>			3. Discuss precautions against fire on tankers during loading/unloading operations		<input type="checkbox"/>			
<input type="checkbox"/>			4. Discuss precautions against fire on tankers during tank cleaning operations		<input type="checkbox"/>			
10.9 - All inspections are recorded with the conditions found.				<i>The inspections results are properly recorded and any requirement for action promptly reported.</i>	<input type="checkbox"/>			
<input type="checkbox"/>			1. Take ullages and temperatures of liquid cargo, if applicable		<input type="checkbox"/>			
<input type="checkbox"/>			2. Take and record hold air temperatures		<input type="checkbox"/>			
<input type="checkbox"/>			3. Identify the temperature of the dew point from the data collected		<input type="checkbox"/>			

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.						Competence Demonstrated Training Officer (Sign/date)	
10.10 - Ensure ventilation and facilitate inspections during the voyage, through supervision to ensure that adequate precautions are taken							
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>Adjusting ventilation or temperature correctly. Or to carry out any other operation for vessel or cargo safety.</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Tending mooring lines, wires, and gangway while the vessel is alongside		<input type="checkbox"/>		
<input type="checkbox"/>			2. Assist as a team member with battening down and securing storage tank lids and/or hatches		<input type="checkbox"/>		
<input type="checkbox"/>			3. Maintain a security deck watch		<input type="checkbox"/>		
10.11 - Before and during discharging, inspect hatch covers, gears, and cargo				<i>Report and record instantly any damage. To prevent any accidents or further damage appropriate actions shall be taken</i>	<input type="checkbox"/>		
<input type="checkbox"/>			1. Rig and use stages and the bosun's chair, under supervision		<input type="checkbox"/>		
<input type="checkbox"/>			2. Rigging overhaul running		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate understanding of overhaul blocks and shackles markings and labeling		<input type="checkbox"/>		

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.

10.11 – (Continue) Before and during discharging, inspect hatch covers, gears, and cargo

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Report and record instantly any damage. To prevent any accidents or further damage appropriate actions shall be taken</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			4. Conduct survey with the Chief Officer of all cargo handling gear and demonstrate an understanding of the test certificates and other documentation involved		<input type="checkbox"/>		
<input type="checkbox"/>			5. Assist with opening, closing, and securing hatch covers, insulated plugs and slabs where appropriate		<input type="checkbox"/>		
<input type="checkbox"/>			6. Assist in handling and securing hatch beams as a member of the team		<input type="checkbox"/>		
<input type="checkbox"/>			7. Assist checking cargo hooks, chains, swivels, and other gear		<input type="checkbox"/>		
<input type="checkbox"/>			8. Assist in safety check of walkways, ladders, handrails, container stools, and other container fittings		<input type="checkbox"/>		
<input type="checkbox"/>			9. Illustrate an awareness of the precautions to be taken when opening and closing hydraulic and mechanical hatch covers		<input type="checkbox"/>		

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.						Competence Demonstrated Training Officer (Sign/date)	
10.12 – Ensure that all cargo is disembarked in good conditions and destination is correct							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Any improper handling of gear cargo will be immediately stopped and reported. All cargoes are discharged in the port of destination and nothing left on board when leaving port.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Assist in the supervision of loading and discharging of cargo, as a member of the team		<input type="checkbox"/>		
<input type="checkbox"/>			2. Cargo damage caused by stevedores to be documented and reported		<input type="checkbox"/>		
<input type="checkbox"/>			3. Assisting in the preparation of cargo documentation		<input type="checkbox"/>		
<input type="checkbox"/>			4. Prior to sailing inspect holds for completion of cargo discharge		<input type="checkbox"/>		

Competence: 10. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes.							Competence Demonstrated Training Officer (Sign/date)	
10.13 – Ensure at all times satisfactory stability, trim, hogging and sagging.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>The safety of the ship influencing factors is constantly monitored and kept within stated acceptable limits.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Tending mooring lines, wires, and gangway while the vessel is alongside		<input type="checkbox"/>			
<input type="checkbox"/>			2. Assist as a team member with battening down and securing storage tank lids and/or hatches		<input type="checkbox"/>			
<input type="checkbox"/>			3. Maintain a security deck watch		<input type="checkbox"/>			
<input type="checkbox"/>			4. Using heeling tanks under supervision to maintain the vessel in an upright condition during loading / discharging		<input type="checkbox"/>			
<input type="checkbox"/>			5. Take readings of draught and calculate hog or sag		<input type="checkbox"/>			
<input type="checkbox"/>			6. Calculate loaded quantity using draughts		<input type="checkbox"/>			
10.14 - Determine any damage to the vessel's structure after loading operations and establish possible causes				<i>Any detected damages, instantly reported and causes established or suggested, based on the circumstances</i>	<input type="checkbox"/>			
<input type="checkbox"/>			1. On completion of discharge, conduct an inspection of cargo spaces and report defects or damages		<input type="checkbox"/>			

TRAINING TASKS

Competence: 11. Security Awareness						Competence Demonstrated Training Officer (Sign/date)	
11.1 – Security Practices On-board							
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>Awareness and demonstrate familiarization to ISPS Code and procedure for compliance</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Conduct a stowaway search		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate anti-piracy watch keeping procedures at sea, anchor and in port		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate International Ship and Port Security (ISPS) procedures for visitors on ship		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate evasive actions in case of suspected targets at sea/congested waters		<input type="checkbox"/>		
<input type="checkbox"/>			5. State the three security levels and its implications on ship and port		<input type="checkbox"/>		
<input type="checkbox"/>			6. Explain the requirements for Ship Security Alert System (SSAS)		<input type="checkbox"/>		
<input type="checkbox"/>			7. Discuss the roles and responsibility of Ship Security Officer (SSO) and Company Security Officer (CSO)		<input type="checkbox"/>		

FUNCTION: CARGO HANDLING AND STOWAGE-ADDITIONAL TASKS FOR TANKERS

TRAINING TASKS

Competence: 12. Monitor loading of cargoes (tankers)							Competence Demonstrated Training Officer (Sign/date)	
12.1 – Supervising the preparation of Cargo Tanks for loading								
Completi on of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completi on of Task	<u>Training Officer</u>		
	Sign	Date		<i>To maintain a safe atmosphere, tanks shall be cleaned, in good condition and order and heating arrangements are functioning. Precautions should be taken before entering tanks or confined spaces</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Reading and understanding of the ship’s safety manual		<input type="checkbox"/>			
<input type="checkbox"/>			2. Reading and understanding the International Safety Guide for Oil Tankers and Terminals (ISGOTT)		<input type="checkbox"/>			
<input type="checkbox"/>			3. Safety checklist to be completed prior to loading		<input type="checkbox"/>			
<input type="checkbox"/>			4. Describe the causes and precautions against generation of static electricity on tankers		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate how to connect and disconnect a loading arm or flexible hose on a tanker		<input type="checkbox"/>			
<input type="checkbox"/>			6. Describe the hazards of hydrogen sulfide, and precautions when loading or unloading with cargoes containing hydrogen sulfide		<input type="checkbox"/>			
<input type="checkbox"/>			7. Observe a deck officer while supervising the tanker operations (De-ballasting)		<input type="checkbox"/>			

Competence: 12. Monitor loading of cargoes (tankers)

12.1 – (Continue) Supervising the Preparation of Cargo Tanks Loading

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>To maintain a safe atmosphere, tanks shall be cleaned, in good condition and order and heating arrangements are functioning. Precautions should be taken before entering tanks or confined spaces</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			8. Observe a deck officer while supervising the tanker operations (Loading bulk oil cargo)		<input type="checkbox"/>		
<input type="checkbox"/>			9. Explain the importance and necessity for maintaining two-valve cargo segregation for bulk oil cargoes		<input type="checkbox"/>		
<input type="checkbox"/>			10. Demonstrate how to take over a port/cargo watch on a bulk oil carrier		<input type="checkbox"/>		
<input type="checkbox"/>			11. Observe a deck officer while supervising the tanker operations (Purging)		<input type="checkbox"/>		
<input type="checkbox"/>			12. Observe a deck officer while supervising the tanker operations (Inerting). State the purpose and uses of inert gas on board tankers		<input type="checkbox"/>		
<input type="checkbox"/>			13. Positioning of the pollution control equipment in accordance with company and terminal regulations		<input type="checkbox"/>		
<input type="checkbox"/>			14. Describe the precautions to be taken in the case of the use of spill dispersants onboard, or in waters around the vessel, in case of a spill		<input type="checkbox"/>		
<input type="checkbox"/>			15. Testing emergency shutdown procedures documentation		<input type="checkbox"/>		
<input type="checkbox"/>			16. Illustrate understanding of loading CR, pump -room, pump operation of deck valves, and layout/operation of deck waves		<input type="checkbox"/>		

Competence: 12. Monitor loading of cargoes (tankers)							Competence Demonstrated Training Officer (Sign/date)	
12.2 – Loading supervising								
Completi on of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completi on of Task	<u>Training Officer</u>		
	Sign	Date		<i>loading cargo in accordance with the cargo plan while maintaining proper trim and stability at all times, any incidents or accidents during loading are reporting immediately and proper actions taken</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Observe and understudy a deck officer while supervising loading		<input type="checkbox"/>			
<input type="checkbox"/>			2. Assisting in Inert Gas Plant operation		<input type="checkbox"/>			
<input type="checkbox"/>			3. Distinguish between “Gas Freeing” and “Ventilation”		<input type="checkbox"/>			
<input type="checkbox"/>			4. State the purpose and uses of inert gas on board tankers		<input type="checkbox"/>			
<input type="checkbox"/>			5. Explain the principle of operation of the Inert Gas System		<input type="checkbox"/>			
<input type="checkbox"/>			6. Explain the principle of operation of the Inert Gas Generator		<input type="checkbox"/>			

Competence: 12. Monitor loading of cargoes (tankers)

12.2 – (Continue) Loading supervising

Completi n of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completi n of Task	<u>Training Officer</u>	
	Sign	Date		<i>loading cargo in accordance with the cargo plan while maintaining proper trim and stability at all times, any incidents or accidents during loading are reporting immediately and proper actions taken</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			7. Check back pressure and calculate loading and discharging rates every hour		<input type="checkbox"/>		
<input type="checkbox"/>			8. Assist with topping-off tanks		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate how to use Ullage, Temperature, and Interface measurement equipment Assist with fixed and portable ullage gauges operation		<input type="checkbox"/>		
<input type="checkbox"/>			10. Keep a record of loading and De-ballasting operations (Maintain a log of all events / timings during cargo operations and state the importance of recording this information)		<input type="checkbox"/>		
<input type="checkbox"/>			11. Discuss what is meant by Hogging and Sagging, and the conditions that give rise to them		<input type="checkbox"/>		
<input type="checkbox"/>			12. Assist with gas venting system operation and pressure /vacuum valves		<input type="checkbox"/>		

Competence: 13. Monitor discharging of cargoes (tankers)							Competence Demonstrated Training Officer (Sign/date)	
13.1 – Before and during discharge, Inspect pumps, lines and valves.								
Completi on of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completi on of Task	<u>Training Officer</u>		
	Sign	Date		<i>Pollution control equipment is ready to use, tested and located properly. Pipelines, Valves, Pumps, gauges and systems are tested pre discharging</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Complete a safety checklist prior to unloading		<input type="checkbox"/>			
<input type="checkbox"/>			2. Complete a safety checklist prior to crude oil washing, list the advantages and disadvantages of Crude Oil Washing (COW) over water washing of cargo tanks		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate the Sweet-crude term		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate the Sou-crude term		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate the Cling-age term		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate the Load -on-top term		<input type="checkbox"/>			
<input type="checkbox"/>			7. Demonstrate an understanding of the reasons for the generation of static electricity in a tank		<input type="checkbox"/>			

Competence: 13. Monitor discharging of cargoes (tankers)

13.1 – (Continue) Before and during discharge, Inspect pumps, lines and valves.

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Pollution control equipment is ready to use, tested and located properly. Pipelines, Valves, Pumps, gauges and systems are tested pre discharging</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			8. Demonstrate correct measures and precautions that may be taken on board tankers to prevent electrostatic hazards		<input type="checkbox"/>		
<input type="checkbox"/>			9. Observe and understudy a deck officer while supervising tankers discharging operations		<input type="checkbox"/>		
<input type="checkbox"/>			10. Understudy deck officer in supervising pump room and cargo control room checks		<input type="checkbox"/>		
<input type="checkbox"/>			11. List the main types of pumps commonly suited for different types and sizes of bulk liquid cargo vessels		<input type="checkbox"/>		
<input type="checkbox"/>			12. Explain the functional purpose of the following components in the piping system: Different types of valves (e.g., Globe, Gate, Butterfly, Flap, Non-Return, Relief, Pressure Reducing and Quick Closing valves) and their actuators		<input type="checkbox"/>		
<input type="checkbox"/>			13. Explain the functional purpose of the following components in the piping system: Drains, expansion arrangements and joints		<input type="checkbox"/>		
<input type="checkbox"/>			14. Explain the functional purpose of the following components in the piping system: Steam traps		<input type="checkbox"/>		

Competence: 13. Monitor discharging of cargoes (tankers)

13.1 – (Continue) Before and during discharge, Inspect pumps, lines and valves

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Pollution control equipment is ready to use, tested and located properly. Pipelines, Valves, Pumps, gauges and systems are tested pre discharging</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			15. Explain the functional purpose of the following components in the piping system: Strainers and filters		<input type="checkbox"/>		
<input type="checkbox"/>			16. Support with the following tanker equipment operation: Launch and start up cargo pumps, stripping pumps, and related systems		<input type="checkbox"/>		
<input type="checkbox"/>			17. Support with the following tanker equipment operation: Inert gas plant		<input type="checkbox"/>		
<input type="checkbox"/>			18. Demonstrate initial actions to be taken in the case of an inert gas system failure during cargo operations		<input type="checkbox"/>		
<input type="checkbox"/>			19. Support in stripping tanks		<input type="checkbox"/>		
<input type="checkbox"/>			20. Record a list of discharging and de-ballasting operations		<input type="checkbox"/>		
<input type="checkbox"/>			21. Describe the purpose of the Oil Record Book, and items to be recorded		<input type="checkbox"/>		
<input type="checkbox"/>			22. Observe and understudy a deck officer in supervising ballasting operations		<input type="checkbox"/>		

Competence: 13. Monitor discharging of cargoes (tankers)								Competence Demonstrated	
13.2 – Assist with cleaning the tanks								Training Officer (Sign/date)	
Completi n of Task	Training Officer		Task/Duty	Assessment Requirements	Completi n of Task	Training Officer			
	Sign	Date		<i>Follow MARPOL appropriate industry codes of practice and guidelines, company’s documented requirements and those of terminals. Maintain Appropriate records.</i>		Sign	Date		
				Improvement Recommendation					
<input type="checkbox"/>			1. Ensuring that all gear, spares, tools, etc. are appropriately stowed and secured		<input type="checkbox"/>				
<input type="checkbox"/>			2. By manual means, take and record daily soundings of engine room tanks, bilges and other spaces		<input type="checkbox"/>				
<input type="checkbox"/>			3. Observe and understudy a deck officer while supervising the Tank cleaning using fixed or portable tank washing machines operations		<input type="checkbox"/>				
<input type="checkbox"/>			4. Observe and understudy a deck officer while supervising the Gas freeing operations		<input type="checkbox"/>				
<input type="checkbox"/>			5. Observe and understudy a deck officer while supervising the Tank entry		<input type="checkbox"/>				
<input type="checkbox"/>			6. Assist in operating the oily water separator and monitoring system. State the components of the ODME and their function		<input type="checkbox"/>				
<input type="checkbox"/>			7. Assist in operating the Interface detectors		<input type="checkbox"/>				
<input type="checkbox"/>			8. Assist in operating the portable tank washing machines		<input type="checkbox"/>				
<input type="checkbox"/>			9. Assist in operating the fixed tank washing machines		<input type="checkbox"/>				

Competence: 13. Monitor discharging of cargoes (tankers)

13.2 – (Continue) Assist with cleaning the tanks

Completi n of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completi n of Task	<u>Training Officer</u>	
	Sign	Date		<i>Follow MARPOL appropriate industry codes of practice and guidelines, company's documented requirements and those of terminals. Maintain Appropriate records</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			10. Assist in operating the programmable washing units		<input type="checkbox"/>		
<input type="checkbox"/>			11. Assist in operating the Gas freeing fans		<input type="checkbox"/>		
<input type="checkbox"/>			12. Assist in operating the Ullage gauges (fixed and portable)		<input type="checkbox"/>		
<input type="checkbox"/>			13. Assist in operating the Oxygen analyzer		<input type="checkbox"/>		
<input type="checkbox"/>			14. Assist in operating the Explosimeter		<input type="checkbox"/>		
<input type="checkbox"/>			15. Assist in operating the Tank scope		<input type="checkbox"/>		
<input type="checkbox"/>			16. Assist in operating the Multiple Toxic Gas Detector		<input type="checkbox"/>		

Competence: 14. Maintain and overhaul cargo systems and associated equipment (tankers)							Competence Demonstrated Training Officer (Sign/date)	
14.1 – Inspect cargo pumps and equipment and assist with maintenance work.								
Completi on of Task	Training Officer		Task/Duty	Assessment Requirements	Completi on of Task	Training Officer		
	Sign	Date		<i>In compliance with manufacturer’s suggestions, valves, pumps, gauges are repaired and any malfunction is reported and required steps are taken.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Illustrate the principle and operating features of Centrifugal pumps		<input type="checkbox"/>			
<input type="checkbox"/>			2. Illustrate the principle and operating features of Reciprocating pumps		<input type="checkbox"/>			
<input type="checkbox"/>			3. Illustrate the principle and operating features of Screw-type pumps		<input type="checkbox"/>			
<input type="checkbox"/>			4. Test cargo pumps and associated valves emergency shut-down		<input type="checkbox"/>			
<input type="checkbox"/>			5. Take inventory of pollution control equipment level at designated location and assess condition		<input type="checkbox"/>			
<input type="checkbox"/>			6. Assist in the overhaul of Tank washing machines		<input type="checkbox"/>			
<input type="checkbox"/>			7. Assist in the overhaul of Gas freeing fans		<input type="checkbox"/>			
<input type="checkbox"/>			8. Assist in the overhaul of Ullage gauges		<input type="checkbox"/>			

Competence: 14. Maintain and overhaul cargo systems and associated equipment (tankers)

14.1 – (Continue) Inspect cargo pumps and equipment and assist with maintenance work

Completi on of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completi on of Task	<u>Training Officer</u>	
	Sign	Date		<i>In compliance with manufacturer’s suggestions, valves, pumps, gauges are repaired and any malfunction is reported and required steps are taken.</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			9. Assist in the overhaul of pressure vacuum valve		<input type="checkbox"/>		
<input type="checkbox"/>			10. Assist in the overhaul of Valve gland		<input type="checkbox"/>		
<input type="checkbox"/>			11. Assist in the overhaul of Mud box		<input type="checkbox"/>		
<input type="checkbox"/>			12. Assist in the overhaul of Tank lids		<input type="checkbox"/>		
<input type="checkbox"/>			13. Assist in the overhaul of Air hoist		<input type="checkbox"/>		
<input type="checkbox"/>			14. Assist in the overhaul of Eductors		<input type="checkbox"/>		
<input type="checkbox"/>			15. Illustrate the operating principle of eductors and assess their advantages/ disadvantages over a pump for stripping operation		<input type="checkbox"/>		
<input type="checkbox"/>			16. Assist in the overhaul of Cleaning of manifold save-alls		<input type="checkbox"/>		

Competence: 14. Maintain and overhaul cargo systems and associated equipment (tankers)

14.1 – (Continue) Inspect cargo pumps and equipment and assist with maintenance work

Completi n of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completi n of Task	<u>Training Officer</u>	
	Sign	Date		<i>In compliance with manufacturer’s suggestions, valves, pumps, gauges are repaired and any malfunction is reported and required steps are taken.</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			17.Assist in the overhaul of Inert gas plant and pipelines		<input type="checkbox"/>		
<input type="checkbox"/>			18.Assist in the overhaul of Oily water separator		<input type="checkbox"/>		
<input type="checkbox"/>			19.Assist in the overhaul of closed-circuit loading arrangements		<input type="checkbox"/>		
<input type="checkbox"/>			20.Assist in the overhaul of pipelines and valves		<input type="checkbox"/>		

Competence: 15. Cargo Operations (tankers)							Competence Demonstrated Training Officer (Sign/date)	
15.1 – Gas - Liquefied Petroleum Gas (LPG) Cargo Operations								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>The handling of dangerous and harmful cargoes complies with international regulations and recognized standards and codes of safe practice.</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Identify the different types of liquefied gas carriers with regards to cargo tank location, hazard potential and damage stability		<input type="checkbox"/>			
<input type="checkbox"/>			2. Define the Independent tanks		<input type="checkbox"/>			
<input type="checkbox"/>			3. Define the Gravity tanks		<input type="checkbox"/>			
<input type="checkbox"/>			4. Define the Integral tanks		<input type="checkbox"/>			
<input type="checkbox"/>			5. Define the Pressure tanks		<input type="checkbox"/>			
<input type="checkbox"/>			6. Briefly describe the “Independent tanks” in a liquefied gas carrier and their various types		<input type="checkbox"/>			
<input type="checkbox"/>			7. State the governing factors for materials used in the construction of tanks for carriage of liquefied gases		<input type="checkbox"/>			
<input type="checkbox"/>			8. State the reasons for providing insulation on tanks of liquefied carriers and the characteristics required for the insulation material used		<input type="checkbox"/>			

Competence: 15. Cargo Operations (tankers)

15.1 – (Continue) Gas - Liquefied Petroleum Gas (LPG) Cargo Operations

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The handling of dangerous and harmful cargoes complies with international regulations and recognized standards and codes of safe practice.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			9. Demonstrate a knowledge of the gas laws		<input type="checkbox"/>		
<input type="checkbox"/>			10. Define the term “saturation temperature”		<input type="checkbox"/>		
<input type="checkbox"/>			11. Define Dew Point and explain why this is important to monitor during the change of atmosphere in the cargo tanks		<input type="checkbox"/>		
<input type="checkbox"/>			12. Illustrate the Emergency Shut Down System (ESD) and its activation points location on board, including method to reset the system		<input type="checkbox"/>		
<input type="checkbox"/>			13. Illustrate in brief the complete cargo cycle from dry-dock to fully loaded to discharged to dry-dock, for a gas carrier		<input type="checkbox"/>		
<input type="checkbox"/>			14. Demonstrate the reasons for providing heaters onboard gas ships		<input type="checkbox"/>		
<input type="checkbox"/>			15. Under supervision carry out all the important checks Prior to loading/ unloading operations		<input type="checkbox"/>		
<input type="checkbox"/>			16. Under supervision carry out all the important checks Immediately after starting loading/unloading operations		<input type="checkbox"/>		
<input type="checkbox"/>			17. Under supervision complete ship/shore safety checklist		<input type="checkbox"/>		

Competence: 15. Cargo Operations (tankers)

15.1 – (Continue) Gas - Liquefied Petroleum Gas (LPG) Cargo Operations

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The handling of dangerous and harmful cargoes complies with international regulations and recognized standards and codes of safe practice.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			18. Understudy the OOW during a cargo watch when loading bulk gas cargo		<input type="checkbox"/>		
<input type="checkbox"/>			19. Understudy the OOW during a cargo watch when unloading bulk gas cargo		<input type="checkbox"/>		
<input type="checkbox"/>			20. Assist to prepare a loading/unloading bulk gas cargo		<input type="checkbox"/>		
<input type="checkbox"/>			21. Describe the cargo related types of fires that may occur commonly on a gas carrier, including their reasons for occurring		<input type="checkbox"/>		
<input type="checkbox"/>			22. Discuss the application of water as a firefighting medium on a gas carrier		<input type="checkbox"/>		
<input type="checkbox"/>			23. Discuss the application of dry chemical powder as a firefighting medium on a gas carrier		<input type="checkbox"/>		
<input type="checkbox"/>			24. Discuss the application of foam as a firefighting medium on a gas carrier		<input type="checkbox"/>		
<input type="checkbox"/>			25. Discuss the application of inert gas and carbon dioxide as firefighting media on a gas carrier		<input type="checkbox"/>		

Competence: 15. Cargo Operations (tankers)							Competence Demonstrated Training Officer (Sign/date)	
15.2 – Chemical Cargo Operations								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>The handling of dangerous and harmful cargoes complies with international regulations and recognized standards and codes of safe practice</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. List and categorize Noxious Liquid Substances (NLS) and Other Substances (OS) as per MARPOL 73/78, as amended		<input type="checkbox"/>			
<input type="checkbox"/>			2. Describe the hazards associated with chemical cargoes and means of defining the hazard		<input type="checkbox"/>			
<input type="checkbox"/>			3. List the personal protection equipment to be carried on chemical carriers, as required by the IBC Code		<input type="checkbox"/>			
<input type="checkbox"/>			4. State the purpose and precautions of adding inhibitors		<input type="checkbox"/>			
<input type="checkbox"/>			5. Discuss the requirement and purpose of the Procedures and Arrangements (P&A) Manual		<input type="checkbox"/>			
<input type="checkbox"/>			6. Under supervision carry out all the important checks prior to starting loading/unloading operations		<input type="checkbox"/>			
<input type="checkbox"/>			7. Under supervision carry out all the important checks immediately after starting loading/unloading operations		<input type="checkbox"/>			

Competence: 15. Cargo Operations (tankers)

15.2 – (Continue) Chemical Cargo Operations

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The handling of dangerous and harmful cargoes complies with international regulations and recognized standards and codes of safe practice</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			8. Under supervision carry out all the important checks of Identifying safety systems, including alarms and trips, and their functions within the cargo pumping system		<input type="checkbox"/>		
<input type="checkbox"/>			9. Understudy the OOW while maintaining a cargo watch during loading bulk chemical cargo		<input type="checkbox"/>		
<input type="checkbox"/>			10. Understudy the OOW while maintaining a cargo watch during unloading bulk chemical cargo		<input type="checkbox"/>		
<input type="checkbox"/>			11. Demonstrate the importance and necessity for maintaining cargo segregation for bulk chemical cargoes		<input type="checkbox"/>		
<input type="checkbox"/>			12. Describe the special considerations for avoiding vapor/cargo contamination during cargo operations		<input type="checkbox"/>		
<input type="checkbox"/>			13. Describe the purpose of the Oil Record Book, and items to be recorded		<input type="checkbox"/>		

FUNCTION: CONTROLLING THE OPERATION OF THE SHIP AND CARE FOR PERSONS ON BOARD AT THE OPERATIONAL LEVEL.

TRAINING TASKS

Competence: 16. Ensure compliance with pollution prevention requirements.							Competence Demonstrated Training Officer (Sign/date)	
16.1 – Protect the marine environment by implementing proactive measures								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Operations should be appropriately planned and in compliance with international regulation both in spirit and word.</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Understand detailed MARPOL regulations that are used to protect the marine and atmospheric environment		<input type="checkbox"/>			
<input type="checkbox"/>			2. Name minimum two Particularly Sensitive Areas (PSSAs)		<input type="checkbox"/>			
<input type="checkbox"/>			3. Illustrate by example preparedness to take personal responsibility for actions to protect the marine environment		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate understanding that marine pollutants must be landed ashore for safe disposal in compliance with MARPOL		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate an understanding that there are strict rules covering disposal at sea of oily water mixtures applicable to all vessels		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate an understanding of the safe and correct operation of the oily water separator, including requirements for accurate record keeping		<input type="checkbox"/>			

Competence: 16. Ensure compliance with pollution prevention requirements.

16.1 – (Continue) Protect the marine environment by implementing proactive measures

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Operations should be appropriately planned and in compliance with international regulation both in spirit and word.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			7. Understand that there are strict rules applicable to all vessels, covering disposal of noxious liquid substances		<input type="checkbox"/>		
			8. Understand that there are strict rules applicable to all vessels, covering disposal of harmful substances carried in packaged form				
<input type="checkbox"/>			9. Understand that there are strict rules applicable to all vessels, covering pollution prevention by sewage		<input type="checkbox"/>		
<input type="checkbox"/>			10. Understand that there are strict rules applicable to all vessels, for prevention of pollution by garbage from vessel		<input type="checkbox"/>		
<input type="checkbox"/>			11. Understand that there are strict rules applicable to all vessels, covering air pollution from ships		<input type="checkbox"/>		
<input type="checkbox"/>			12. Demonstrate understanding of the impact of SOx, NOx and why efforts are needed to reduce atmospheric pollution		<input type="checkbox"/>		
<input type="checkbox"/>			13. Understand that there are strict rules for the management and treatment of ballast water		<input type="checkbox"/>		
<input type="checkbox"/>			14. Demonstrate the understanding of the requirements under the ISM Code regarding environmental protection		<input type="checkbox"/>		

Competence: 16. Ensure compliance with pollution prevention requirements.							Competence Demonstrated Training Officer (Sign/date)	
16.2 – Ensure that procedures are properly planned and agreed, and all scuppers are blocked before bunkering.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Prior to bunkering, the operations are properly planned, all scuppers are blocked and pipes and hoses inspected</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Plug deck scuppers		<input type="checkbox"/>			
<input type="checkbox"/>			2. Illustrate knowledge of vessel bunkering procedures		<input type="checkbox"/>			
<input type="checkbox"/>			3. Assist in bunkering operations		<input type="checkbox"/>			
<input type="checkbox"/>			4. Illustrate the emergency shut down		<input type="checkbox"/>			
16.3 - Initiating immediate investigation to detect the source on discovering any pollution around the ship.				<i>Utilize all available resources to detect the source and the master or authorities are informed as appropriate</i>	<input type="checkbox"/>			
<input type="checkbox"/>			1. Assist in an emergency response exercise for controlling spillage of oil, or other noxious or toxic substance on board		<input type="checkbox"/>			
16.4 – Prevent or stop leakages and spills of harmful liquids and solid substances.				<i>Thoroughly assess the situation and the actions taken are well organized and exercised and due consideration taken of the extent of the pollution.</i>	<input type="checkbox"/>			
<input type="checkbox"/>			1. Illustrate use of material data safety sheets and the IMDG Code for obtaining information on cargo hazards and handling instructions		<input type="checkbox"/>			
<input type="checkbox"/>			2. Assist in drills for clean-up of hazardous cargo spillage		<input type="checkbox"/>			
<input type="checkbox"/>			3. Describe the precautions to be taken in the use of spill dispersants onboard, or in waters around the vessel in case of a spill		<input type="checkbox"/>			

Competence: 16. Ensure compliance with pollution prevention requirements.							Competence Demonstrated Training Officer (Sign/date)	
16.5 – Sounding all tanks and compartments if any damage is suspected.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Sound checks are readily available, and the results immediately reported to the master.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Participate in stranding emergency response exercise		<input type="checkbox"/>			
<input type="checkbox"/>			2. Sounding of bilges, peak tanks, double bottom and other tanks, and recording information		<input type="checkbox"/>			
16.6 – Carrying out bilge, ballast and bunker operations				<i>Operations are carried out in accordance with MARPOL and due regard paid to the Shipboard Oil Pollution Emergency Plan (SOPEP.)</i>	<input type="checkbox"/>			
<input type="checkbox"/>			1. Locate the vessel's ballast water management plan and illustrate an understanding of its content		<input type="checkbox"/>			
<input type="checkbox"/>			2. Observe and understudy the engineer officer conducting a ballast operation		<input type="checkbox"/>			
<input type="checkbox"/>			3. Observe and understudy the engineer officer conducting tanks washing operation		<input type="checkbox"/>			

Competence: 17. Maintain seaworthiness of the ship						Competence Demonstrated Training Officer (Sign/date)	
17.1 – Inspecting hull and openings, hatch covers, compartments, and equipment, and take action where defects are detected							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The inspection is carried out, due regard paid to the prevailing circumstances and areas where defects are most likely to occur. Any defect is immediately reported and recorded and the suggested or executed action adequate for the situation</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Illustrate knowledge of the required precautions for Entry into enclosed spaces		<input type="checkbox"/>		
<input type="checkbox"/>			2. State the requirement for oxygen/toxic/flammable gas content inside a space before it is deemed fit for man-entry		<input type="checkbox"/>		
<input type="checkbox"/>			3. Illustrate knowledge of the required precautions for Working aloft		<input type="checkbox"/>		
<input type="checkbox"/>			4. Illustrate knowledge of the required precautions for Working over the side		<input type="checkbox"/>		
<input type="checkbox"/>			5. Illustrate knowledge of the required precautions for Use of power tools		<input type="checkbox"/>		
<input type="checkbox"/>			6. Illustrate knowledge of the required precautions for Lifting and carrying manually		<input type="checkbox"/>		
<input type="checkbox"/>			7. Assist, where necessary, in opening, closing, and securing of hatches		<input type="checkbox"/>		

Competence: 17. Maintain seaworthiness of the ship

17.1- (Continue) Inspecting hull and openings, hatch covers, compartments, and equipment, and take action where defects are detected

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The inspection is carried out, due regard paid to the prevailing circumstances and areas where defects are most likely to occur. Any defect is immediately reported and recorded and the suggested or executed action adequate for the situation</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			8. Assist where necessary in opening, closing, and securing hydraulic hatches		<input type="checkbox"/>		
<input type="checkbox"/>			9. Assist in maintenance of watertight doors, ports, and hatches		<input type="checkbox"/>		
<input type="checkbox"/>			10. Assist in maintenance of fairleads, tumblers, goosenecks, etc.		<input type="checkbox"/>		
<input type="checkbox"/>			11. Roller beams - inspection and lubrication		<input type="checkbox"/>		
<input type="checkbox"/>			12. Deck stores - checking full inventory		<input type="checkbox"/>		
<input type="checkbox"/>			13. Preparing steel plates and other surfaces for protective coating		<input type="checkbox"/>		
<input type="checkbox"/>			14. Applying protective coats to appropriate surfaces		<input type="checkbox"/>		

Competence: 17. Maintain seaworthiness of the ship							Competence Demonstrated Training Officer (Sign/date)	
17.2 - Securely fasten all loose objects to avoid damage.								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Regular intervals inspection is carried out and more frequently in heavy weather or if other incidents occur. Heavy or otherwise dangerous objects are given the highest priority and good seamanship exercised</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Assist in properly stowing and securing all gear, tools, spares, etc.		<input type="checkbox"/>			
<input type="checkbox"/>			2. Assisting in the rigging of safety lines and guard rails		<input type="checkbox"/>			
<input type="checkbox"/>			3. Assisting in lashing deck cargo		<input type="checkbox"/>			
17.3 - Arranging regular control measures to ensure watertight integrity.				<i>Peaks, bilges, tanks, and other compartments are routinely sounded, the results are recorded, and any irregularities reported and examined further</i>	<input type="checkbox"/>			
<input type="checkbox"/>			1. Manually take and record the daily soundings of tanks, bilges, and other spaces		<input type="checkbox"/>			
<input type="checkbox"/>			2. Take and record the daily soundings of tanks, bilges, and other spaces by use of gauges		<input type="checkbox"/>			
<input type="checkbox"/>			3. Check and report water-tight doors, ports, and hatches for weather tightness		<input type="checkbox"/>			

Competence: 18. Prevent, control and fight fires on board							Competence Demonstrated Training Officer (Sign/date)	
18.1 – Operate smoke and fire detection equipment								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>The equipment shall be checked and utilized regularly and in according to the manufacturer's manuals and the detailed instructions of the ship</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Determine the correct type of extinguisher for different types of fire		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate use of portable CO2 extinguishers		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate use of portable Foam extinguishers		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate use of portable DCP extinguishers		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate use of portable Water-Type extinguishers		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate use of portable Soda Acid extinguishers		<input type="checkbox"/>			
<input type="checkbox"/>			7. Illustrate understanding of the usage, and assist in the maintenance of portable foam extinguishers including refilling		<input type="checkbox"/>			
<input type="checkbox"/>			8. Illustrate understanding of the usage and assist in the maintenance of portable CO2 extinguishers including refilling		<input type="checkbox"/>			
<input type="checkbox"/>			9. Illustrate understanding of the usage and assist in the maintenance of portable dry powder extinguishers including refilling		<input type="checkbox"/>			

Competence: 18. Prevent, control and fight fires on board

18.1 – (Continue) Operate smoke and fire detection equipment

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The equipment shall be checked and utilized regularly and in accordance to the manufacturer's manuals and the detailed instructions of the ship</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			10. Illustrate understanding of the usage, and assist in the maintenance of portable water extinguishers including refilling		<input type="checkbox"/>		
<input type="checkbox"/>			11. Maintain hoses, couplings, and nozzles.		<input type="checkbox"/>		
<input type="checkbox"/>			12. State the requirements for testing ashore of Portable CO2 extinguishers		<input type="checkbox"/>		
<input type="checkbox"/>			13. State the requirements of testing ashore of the Foam compound		<input type="checkbox"/>		
<input type="checkbox"/>			14. State the requirements of testing ashore of Fixed CO2 extinguishing system bottles		<input type="checkbox"/>		
18.2 - Ensure that all persons on watch are able to correct and detect hazardous situations and actions and keep the vessel tidy and clean.				<i>Ensure readily combustible materials are stored safely and the watch demonstrates an attitude of alertness to fire prevention. Personnel on watchmaking inspections in areas at risk from possible fires are supervised.</i>	<input type="checkbox"/>		
<input type="checkbox"/>			1. Carry out duties of fire patrol		<input type="checkbox"/>		
<input type="checkbox"/>			2. After maintenance work re-stow gear		<input type="checkbox"/>		

Competence: 18. Prevent, control and fight fires on board						Competence Demonstrated Training Officer (Sign/date)	
18.3 – Locating fire stations and demonstrate proper use of fixed installations and other firefighting appliances and agents.							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Select proper equipment and extinguishing agents for the various materials on fire. Locate all stations and the most suitable one selected in the event of a fire.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Report to the Chief Officer a full assessment of the firefighting equipment		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate how to maintain fire hoses, nozzles, and hydrants		<input type="checkbox"/>		
<input type="checkbox"/>			3. Participate in an emergency fire response drill at sea and in port		<input type="checkbox"/>		
<input type="checkbox"/>			4. Illustrate how to raise the alarm		<input type="checkbox"/>		
<input type="checkbox"/>			5. List all the records that need to be maintained onboard for the maintenance of the FFA, and state the importance of record-keeping		<input type="checkbox"/>		
<input type="checkbox"/>			6. Show how to extract specific information from Safety of Life at Sea (SOLAS) Convention		<input type="checkbox"/>		

Competence: 18. Prevent, control and fight fires on board							Competence Demonstrated Training Officer (Sign/date)	
18.4 – Detect fire stations location and demonstrate proper use of fixed installations and other firefighting appliances and agents								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Locate stations and choose the most suitable station for each fire incident. decide which suitable agent and equipment for object on fire</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Assist in checking the Fire detection and alarm systems where installed		<input type="checkbox"/>			
<input type="checkbox"/>			2. Assist in checking the fire alarm where installed		<input type="checkbox"/>			
<input type="checkbox"/>			3. Assist in checking the fixed automatic sprinklers where installed		<input type="checkbox"/>			
<input type="checkbox"/>			4. Assist in checking the fixed steam systems where installed		<input type="checkbox"/>			
<input type="checkbox"/>			5. Assist in checking the fixed foam extinguishers where installed		<input type="checkbox"/>			
<input type="checkbox"/>			6. Assist in checking the fixed CO2 systems where installed		<input type="checkbox"/>			
<input type="checkbox"/>			7. Assist in checking the foam (for Deck fire of tanker) where installed		<input type="checkbox"/>			
<input type="checkbox"/>			8. Assist in checking the sprinkler System where installed		<input type="checkbox"/>			
<input type="checkbox"/>			9. Assist in checking the fire flaps and dampers where installed		<input type="checkbox"/>			

Competence: 18. Prevent, control and fight fires on board

18.4 – (Continue) Detect fire stations location and demonstrate proper use of fixed installations and other firefighting appliances and agents

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Locate stations and choose the most suitable station for each fire incident. Decide which suitable agent and equipment for object on fire</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			10. Assist in checking the automatic and manual fire doors where installed		<input type="checkbox"/>		
<input type="checkbox"/>			11. Assist in checking the emergency shut off valves, pump stops, and main engine stops where installed		<input type="checkbox"/>		
<input type="checkbox"/>			12. Describe the fixed fire extinguishing operation.		<input type="checkbox"/>		
<input type="checkbox"/>			13. Prior to operating the system state the safety precautions required		<input type="checkbox"/>		

Competence: 18. Prevent, control and fight fires on board						Competence Demonstrated Training Officer (Sign/date)	
18.5 – Locating and using fire protective equipment (fire fighter’s outfit, including breathing apparatus).							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Equipment is quickly donned and used in such a way that no accidents are likely to occur.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Illustrate the procedures and precautions required for entry into an enclosed space		<input type="checkbox"/>		
<input type="checkbox"/>			2. Illustrate the difference between Self Contained Breathing Apparatus set and Emergency Escape Breathing device		<input type="checkbox"/>		
<input type="checkbox"/>			3. Illustrate donning and use of SCBA sets		<input type="checkbox"/>		
<input type="checkbox"/>			4. Illustrate donning and use of a fire fighter’s outfit		<input type="checkbox"/>		
<input type="checkbox"/>			5. Illustrate donning and use of a fire fighter’s outfit with a SCBA set		<input type="checkbox"/>		
<input type="checkbox"/>			6. Illustrate the use of BA record /control board		<input type="checkbox"/>		
<input type="checkbox"/>			7. Demonstrate the proper procedures for filling up the Self-Contained Breathing Apparatus using a compressor, and state the precautions to take for filling the bottles on board		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate use of Emergency Escape Breathing Device (EEBD)		<input type="checkbox"/>		

Competence: 18. Prevent, control and fight fires on board						Competence Demonstrated Training Officer (Sign/date)	
18.6 – Illustrate ability to act in accordance with the firefighting plan during fire drills							
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>The reasons for each action taken, including the priority in which they were taken, are explained, and accepted as the most appropriate, after an exercise or a real fire extinguishing incident.</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Participate in a fire party during an exercise		<input type="checkbox"/>		
<input type="checkbox"/>			2. Illustrate the use and location of all engine room escape routes and safety appliances		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate how to extract related information from Safety of Life at Sea (SOLAS) Convention and International Life Saving Appliance (LSA) Code		<input type="checkbox"/>		

Competence: 19. Operate life-saving appliances						Competence Demonstrated Training Officer (Sign/date)	
19.1 – Organizing abandon ship drills							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>On sounding the alarm all persons meet at the designated lifeboat station wearing safety belts or immersion suits and carry out their duties on request.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Understanding the hazards to seafarers of manning lifeboats for exercises and drill		<input type="checkbox"/>		
<input type="checkbox"/>			2. Understanding the necessity to be familiar with the operation of on-load release mechanisms		<input type="checkbox"/>		
<input type="checkbox"/>			3. Understand that fall prevention devices (FPDs), where fitted, should be used in drill to prevent unforeseen detachment		<input type="checkbox"/>		
<input type="checkbox"/>			4. Understand the need for meticulous inspection and maintenance of on-load release mechanisms		<input type="checkbox"/>		
<input type="checkbox"/>			5. Recognize the maintenance requirements by shipboard personnel and the manufacturer		<input type="checkbox"/>		
<input type="checkbox"/>			6. Shipboard personnel to show knowledge of the maintenance requirements of the approved agents of the manufacturer		<input type="checkbox"/>		
<input type="checkbox"/>			7. Under supervision show knowledge with the lifeboat (free fall lifeboat) manufacturers operating instructions for the use and operation of the davits, winches, brakes, air bottle system, sprinkler system, lifeboats, release and operating mechanisms (including FPD where installed), and appropriate checking and testing of such devices and controls		<input type="checkbox"/>		
<input type="checkbox"/>			8. Classify the permanent labeling on survival craft with regard to the number of occupants		<input type="checkbox"/>		

Competence: 19. Operate life-saving appliances

19.1 – (Continue) Organizing abandon ship drills

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>On sounding the alarm all persons meet at the designated lifeboat station wearing safety belts or immersion suits and carry out their duties on request.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			9. Locate and test the operation of Radio devices including SART and EPIRBs		<input type="checkbox"/>		
<input type="checkbox"/>			10. Demonstrate how to test and maintain a Search and Rescue Transponder (SART) and Emergency Position Indicating Radio Beacon (EPIRB)		<input type="checkbox"/>		
<input type="checkbox"/>			11. Locate and test the operation of Pyrotechnic distress signals		<input type="checkbox"/>		
<input type="checkbox"/>			12. State precautions for disposal of out-of-date pyrotechnics		<input type="checkbox"/>		
<input type="checkbox"/>			13. Arrange a boat and fire muster list		<input type="checkbox"/>		
<input type="checkbox"/>			14. Demonstrate how to use a Life-buoy (with line, light, and smoke marker)		<input type="checkbox"/>		
<input type="checkbox"/>			15. Demonstrate how to use life jacket		<input type="checkbox"/>		
<input type="checkbox"/>			16. Demonstrate how to use Thermal Protective Aid (TPA)		<input type="checkbox"/>		
<input type="checkbox"/>			17. Observe and understudy the officer in charge of an abandon ship drill		<input type="checkbox"/>		

Competence: 19. Operate life-saving appliances							Competence Demonstrated Training Officer (Sign/date)	
19.2 – Lifeboat lunch, handle and recover								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Launching embarkation with correct orders and immediately clearing the ship's side is given. The boat is safely handled under motor, oars, or sail as appropriate. The boat is safely recovered and ready.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Assisting in preparation and swinging out of lifeboats and be aware of potential risks		<input type="checkbox"/>			
<input type="checkbox"/>			2. Assisting in preparation and boarding of free fall lifeboats and be aware of potential risks		<input type="checkbox"/>			
<input type="checkbox"/>			3. Assisting in lowering a lifeboat to clear the ship and ride to a sea anchor		<input type="checkbox"/>			
<input type="checkbox"/>			4. Starting and operating a lifeboat engine		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge of the principles of lifeboat sailing		<input type="checkbox"/>			
<input type="checkbox"/>			6. Crew a boat under: Oars <input type="checkbox"/> Power <input type="checkbox"/>		<input type="checkbox"/>			
<input type="checkbox"/>			7. Cox a boat under: Oars <input type="checkbox"/> Power <input type="checkbox"/>		<input type="checkbox"/>			
<input type="checkbox"/>			8. Assisting in securing and recovering of a lifeboat		<input type="checkbox"/>			
<input type="checkbox"/>			9. Assisting in securing and recovering a free fall lifeboat		<input type="checkbox"/>			

Competence: 19. Operate life-saving appliances							Competence Demonstrated Training Officer (Sign/date)	
19.3 – Launching or throwing overboard a life raft, and maneuvering it clear of vessel’s side								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		Clearly allocate the duties for the persons designated for the raft, orders efficiently executed, the raft is quickly righted if inverted, and all persons boarded before the raft moves away from the ship.		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Illustrate knowledge of the procedure of launching and inflating life-rafts when the opportunity arises		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate/describe the use and principle of hydrostatic release mechanism and the weak link		<input type="checkbox"/>			
19.4 - Radio lifesaving appliances operating				<i>Radio contact shall be established without alerting anyone by transmitting false signals.</i>	<input type="checkbox"/>			
<input type="checkbox"/>			1. Under supervision, rig and operate the portable lifeboat radio and aerial		<input type="checkbox"/>			

Competence: 19. Operate life-saving appliances							Competence Demonstrated Training Officer (Sign/date)	
19.5 – All required equipment on board a rescue craft is functioning and maintained as specified in the SOLAS Training Manual								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Using pyrotechnics properly, food, water and signaling equipment is demonstrated satisfactorily.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Illustrate an understanding of statutory equipment required in survival craft and its proper use		<input type="checkbox"/>			
<input type="checkbox"/>			2. State minimum requirements of food and water for occupants of survival craft		<input type="checkbox"/>			
<input type="checkbox"/>			3. Locating and understanding the operation of pyrotechnics, including precautions for their disposal		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge of rocket line throwing apparatus operation		<input type="checkbox"/>			
<input type="checkbox"/>			5. Assisting in the maintenance of: Lifeboat and rescue boats		<input type="checkbox"/>			
<input type="checkbox"/>			6. Assisting in the maintenance of: Lifeboat equipment and provisions		<input type="checkbox"/>			
<input type="checkbox"/>			7. Assisting in the maintenance of: Launching davits and gear		<input type="checkbox"/>			

Competence: 19. Operate life-saving appliances

19.5 – (Continue) All required equipment on board a rescue craft is functioning and maintained as specified in the SOLAS Training Manual

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Using pyrotechnics properly, food, water and signaling equipment is demonstrated satisfactorily.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			8. Assisting in the maintenance of: Buoyant apparatus, e.g., life-jackets, life-buoys, and attachments		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate “fireman’s lift and carry”		<input type="checkbox"/>		
<input type="checkbox"/>			10. Demonstrate the preparation for helicopter landing on board		<input type="checkbox"/>		
<input type="checkbox"/>			11. Assisting in the maintenance of: Immersion suits and thermal protective aids		<input type="checkbox"/>		
<input type="checkbox"/>			12. Assisting in the maintenance of: Other survival craft specify type.		<input type="checkbox"/>		
<input type="checkbox"/>			13. Assisting in the routine maintenance of a lifeboat engine		<input type="checkbox"/>		

Competence: 20. Apply medical first aid on board ship							Competence Demonstrated Training Officer (Sign/date)	
20.1 – Stopping excessive bleeding, ensure breathing and put casualties in a proper position								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>The demonstrated actions are in compliance with accepted recommendations given in international medical first aid guidance</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Participating in emergency first aid drill at sea		<input type="checkbox"/>			
<input type="checkbox"/>			2. Illustrate a basic understanding of first aid participles (Stopping bleeding)		<input type="checkbox"/>			
<input type="checkbox"/>			3. Illustrate a basic understanding of first aid participles (Treatment of suffocation /drowning)		<input type="checkbox"/>			
<input type="checkbox"/>			4. Illustrate a basic understanding of first aid participles (Treating injuries and placing them in the recovery position)		<input type="checkbox"/>			
<input type="checkbox"/>			5. Recognize the location and maintenance requirements of oxygen resuscitator		<input type="checkbox"/>			
<input type="checkbox"/>			6. Recognize the location and maintenance requirements of defibrillator		<input type="checkbox"/>			

Competence: 20. Apply medical first aid on board ship							Competence Demonstrated Training Officer (Sign/date)	
20.2 – Recognize the signs of shock and heat stroke and respond accordingly								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Ability to request Radio Medico for advice is demonstrated. The treatment recommends or given is adequate.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Illustrate how to handle a shock casualty		<input type="checkbox"/>			
<input type="checkbox"/>			2. Illustrate how to respond to a heat stroke		<input type="checkbox"/>			
20.3 - Treat burns, scalds, fractures, and hypothermia				<i>Principles for avoiding hypothermia are demonstrated. Recommended guidelines for proper actions are explained.</i>	<input type="checkbox"/>			
<input type="checkbox"/>			1. State procedure for dealing with an electrical shock casualty		<input type="checkbox"/>			
<input type="checkbox"/>			2. Illustrate procedure for treating burns		<input type="checkbox"/>			
<input type="checkbox"/>			3. Illustrate procedure for treating minor fractures		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate procedures for avoiding hypothermia		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate procedures for treating casualty with hypothermia		<input type="checkbox"/>			

Competence: 21. Monitor compliance with legislative requirements							Competence Demonstrated Training Officer (Sign/date)	
21.1 – Stating where laws, rules and regulations concerning vessel operation and pollution prevention are available								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Given statement is correct and includes relevant bodies or organizations which may be contacted to obtain special information or guidance which is not easily accessible.</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Locating on board copies of the SOLAS Convention		<input type="checkbox"/>			
<input type="checkbox"/>			2. Locating on board copies of the MARPOL Convention		<input type="checkbox"/>			
<input type="checkbox"/>			3. Locating on board copies of Garbage Record Book		<input type="checkbox"/>			
<input type="checkbox"/>			4. Locate copies of certificates issued under SOLAS, MARPOL, Load line, STCW, MLC and other regulations		<input type="checkbox"/>			
21.2 Searching for the stowaways				<i>Comprehensive and detailed search is conducted, and findings are reported to the responsible officer</i>	<input type="checkbox"/>			
<input type="checkbox"/>			1. Carrying out a stowaway search		<input type="checkbox"/>			

Competence: 21. Monitor compliance with legislative requirements							Competence Demonstrated Training Officer (Sign/date)	
21.3 – Use legislation to verify complying on board operations with international regulations								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Establishing a correct response within an acceptable time frame and consequential actions executed.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Participating in bilge pumping in compliance with MARPOL		<input type="checkbox"/>			
<input type="checkbox"/>			2. Garbage disposing at sea/on shore in compliance with MARPOL and Ship’s Garbage Management Plan		<input type="checkbox"/>			
<input type="checkbox"/>			3. Prior to safety equipment survey, assist in lifesaving equipment inspection		<input type="checkbox"/>			
<input type="checkbox"/>			4. Prior to survey for load line certificate, participate in shipboard inspection		<input type="checkbox"/>			
<input type="checkbox"/>			5. Show how to extract relevant information from ‘Code of Safe Working Practices’		<input type="checkbox"/>			
<input type="checkbox"/>			6. State the functional purpose of a “Classification Society”		<input type="checkbox"/>			
<input type="checkbox"/>			7. Describe the purpose of OCIMF “SIRE” inspection is conducted onboard the vessel		<input type="checkbox"/>			
<input type="checkbox"/>			8. HSSE and QA System		<input type="checkbox"/>			

Competence: 21. Monitor compliance with legislative requirements

21.3 – (Continue) Use legislation to verify compliance of onboard operations with international regulations

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Establishing a correct response within an acceptable time frame and consequential actions executed.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			9. Discuss the main requirements of International Safety Management (ISM) Code		<input type="checkbox"/>		
<input type="checkbox"/>			10. List the roles and responsibility of Designated Person Ashore (DPA)		<input type="checkbox"/>		
<input type="checkbox"/>			11. Describe the “permit to work” system		<input type="checkbox"/>		
<input type="checkbox"/>			12. Demonstrate the purpose of the hot work permit and procedures to obtain the permit prior commencing hot work on board		<input type="checkbox"/>		

Competence: 22. Application of Leadership and Team Working Skills							Competence Demonstrated Training Officer (Sign/date)	
22.1 – Plays team role								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Displays awareness of others working nearby and in common goals. Challenges questionable decisions in a seamanlike manner. Freely shares information concerning the maneuver or task in hand. clearly communicates and unambiguously in the language understanding.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Understand that each has different experience as a team member and has a part to play in any task		<input type="checkbox"/>			
<input type="checkbox"/>			2. Actively engage in task planning meetings involving different ranks		<input type="checkbox"/>			
<input type="checkbox"/>			3. Realize that communication is a two-way exchange and illustrate this in practice both on the bridge and on the deck		<input type="checkbox"/>			
<input type="checkbox"/>			4. Maintain awareness about changing circumstances and situations		<input type="checkbox"/>			
<input type="checkbox"/>			5. Accept authority while questioning instructions if in doubt		<input type="checkbox"/>			
<input type="checkbox"/>			6. Check own understanding of situation is shared by other team members		<input type="checkbox"/>			
<input type="checkbox"/>			7. Participate actively in evaluation meetings involving different ranks, and in task review		<input type="checkbox"/>			
<input type="checkbox"/>			8. State the hours of rest requirements as stipulated by International Labour Organization (ILO)		<input type="checkbox"/>			

Competence: 22. Application of Leadership and Team Working Skills						Competence Demonstrated Training Officer (Sign/date)	
22.2 – Demonstrate Leadership ability							
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>Initiative is taken and others are coordinated alongside, and tasks are carried out in timely way</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Plan ahead and schedule tasks that will be accompanied by urgent tasks or maneuvers		<input type="checkbox"/>		
<input type="checkbox"/>			2. Set priorities correctly when seeing conflict between immediate needs and tasks that may be held back		<input type="checkbox"/>		
<input type="checkbox"/>			3. Allocate resources effectively to achieve desired outcomes		<input type="checkbox"/>		
<input type="checkbox"/>			4. Check results and take corrective actions as needed/instructed		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate the confidence and maturity to refer to senior officer if in doubt		<input type="checkbox"/>		

SECTION 8 CADET STEERING CERTIFICATE

It is crucial that you know how to steer the ship at sea and realize how to conduct helm instructions properly. You will have day, night and entering and leaving port shifts at the wheel. Maintain continuous and clear record of your steering experience by requesting the officer on duty to complete the steering record in the next pages. When you have done your shift on the wheel for at minimum periods, enquire the master signature on the Cadet Steering Certificate.

REMARK

Cadet Steering Certificates can be issued as per number of steering hours on each ship, and several certificates could be included in order to achieve the minimum requirements of steering hours as per the following:

- | | |
|---|------------|
| A. Steering by magnetic compass by day | - 10 hours |
| B. Steering by gyro compass by day | - 10 hours |
| C. Steering by magnetic compass by night | - 10 hours |
| D. Steering by gyro compass by night | - 10 hours |
| E. Steering by sight | - 5 hours |
| F. Steering while entering and leaving port | - 5 hours |

Competence: Steering the Ship					Competence Demonstrated		
					Training Officer (Sign/date)		
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Steering is efficient in narrow and coastal waters and under pilotage. All orders are acknowledged and complied with in a seamanlike manner. Changeover to manual steering and vice-versa is executed unaided</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Applying helm commands correctly		<input type="checkbox"/>		
<input type="checkbox"/>			2. Understanding procedure for handing over the wheel		<input type="checkbox"/>		
<input type="checkbox"/>			3. Understand operation of the main steering system and auto pilot (List the situations when it may become necessary to change the vessel from auto to manual steering mode and to emergency steering mode)		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate correct procedure for changing over from manual steering to auto helm and vice-versa		<input type="checkbox"/>		
<input type="checkbox"/>			5. Steer by magnetic compass		<input type="checkbox"/>		
<input type="checkbox"/>			6. Steer by gyro compass		<input type="checkbox"/>		
<input type="checkbox"/>			7. Take turns at the wheel in steering the ship for periods of at minimum 10 hours, excluding periods of instruction		<input type="checkbox"/>		
<input type="checkbox"/>			8. Steering the vessel while entering/leaving port		<input type="checkbox"/>		
<input type="checkbox"/>			9. Steering the vessel while in canal/river transits		<input type="checkbox"/>		
<input type="checkbox"/>			10. Steering the vessel while in coastal waters and straits		<input type="checkbox"/>		

Steering Minimum periods	Voyage		Steered			Remarks	Signature of Officer in Charge of the Watch
	From	To	Date	Duration			
				From	To		
Steering by magnetic compass By day 10 hrs.							
Steering by gyro compass By day 10 hrs.							
Steering by magnetic compass By Night 10 hrs.							

Steering Minimum periods	Voyage		Steered			Remarks	Signature of Officer in Charge of the Watch
	From	To	Date	Duration			
				From	To		
Steering by gyro compass By Night 10 hrs.							
Steering by sight (without aid of compass) 5 hrs.							
Steering while entering or leaving port 5 hrs.							
TOTAL DURATION							

FIRST SHIP

 ● 
STEERING CERTIFICATE

Enrollment No.

Surname

Other Names

Seafarer's Book No.

Signature of Cadet

THIS IS TO CERTIFY THAT THE ABOVE-NAMED CADET HAS BEEN UNDER TRAINING ON

SHIP NAME:

From

To

During this period the cadet took turns at the helm for steering the vessel. From the records and during training on this ship it is confirmed that the cadet has taken turns at the wheel in steering the ship (apart from periods of instruction) for the duration as detailed below:

Has been found to be a proficient hand for steering the ship

Master

Date

A. Steering by (magnetic/gyro) compass by day

mv/ss

..... hours

B. Steering by (magnetic/gyro) compass by night

Owned by

..... hours

C. Steering by sight

Ship's Official Stamp

..... hours

D. Steering while entering and leaving port

..... hours

SECOND SHIP

STEERING CERTIFICATE

Enrollment No.

Surname

Other Names

.....

.....

Seafarer's Book No.

Signature of Cadet

.....

.....

THIS IS TO CERTIFY THAT THE ABOVE-NAMED CADET HAS BEEN UNDER TRAINING ON

SHIP NAME:

From

To

.....

.....

.....

During this period the cadet took turns at the helm for steering the vessel. From the records and during training on this ship it is confirmed that the cadet has taken turns at the wheel in steering the ship (apart from periods of instruction) for the duration as detailed below:

Has been found to be a proficient hand for steering the ship

Master

Date

.....

.....

mv/ss

.....

Owned by

.....

Ship's Official Stamp

A. Steering by (magnetic/gyro) compass by day

..... hours

B. Steering by (magnetic/gyro) compass by night

..... hours

C. Steering by sight

..... hours

D. Steering while entering and leaving port

..... hours

THIRD SHIP

STEERING CERTIFICATE

Enrollment No.

Surname

Other Names

.....

.....

Seafarer's Book No.

Signature of Cadet

.....

.....

THIS IS TO CERTIFY THAT THE ABOVE-NAMED CADET HAS BEEN UNDER TRAINING ON

SHIP NAME:

From

To

.....

.....

.....

During this period the cadet took turns at the helm for steering the vessel. From the records and during training on this ship it is confirmed that the cadet has taken turns at the wheel in steering the ship (apart from periods of instruction) for the duration as detailed below:

Has been found to be a proficient hand for steering the ship

Master

Date

.....

.....

mv/ss

.....

Owned by

.....

Ship's Official Stamp

A. Steering by (magnetic/gyro) compass by day

..... hours

B. Steering by (magnetic/gyro) compass by night

..... hours

C. Steering by sight

..... hours

D. Steering while entering and leaving port

..... hours

FOURTH SHIP


STEERING CERTIFICATE

Enrollment No.

Surname

Other Names

.....

.....

Seafarer's Book No.

Signature of Cadet

.....

.....

THIS IS TO CERTIFY THAT THE ABOVE-NAMED CADET HAS BEEN UNDER TRAINING ON

SHIP NAME:

From

To

.....

.....

.....

During this period the cadet took turns at the helm for steering the vessel. From the records and during training on this ship it is confirmed that the cadet has taken turns at the wheel in steering the ship (apart from periods of instruction) for the duration as detailed below:

Has been found to be a proficient hand for steering the ship

Master

Date

.....

.....

mv/ss

.....

A. Steering by (magnetic/gyro) compass by day

..... hours

B. Steering by (magnetic/gyro) compass by night

..... hours

Owned by

.....

C. Steering by sight

..... hours

Ship's Official Stamp

D. Steering while entering and leaving port

..... hours

FIFTH SHIP

STEERING CERTIFICATE

Enrollment No.

Surname

Other Names

.....

.....

Seafarer's Book No.

Signature of Cadet

.....

.....

THIS IS TO CERTIFY THAT THE ABOVE-NAMED CADET HAS BEEN UNDER TRAINING ON

SHIP NAME:

From

To

.....

.....

.....

During this period the cadet took turns at the helm for steering the vessel. From the records and during training on this ship it is confirmed that the cadet has taken turns at the wheel in steering the ship (apart from periods of instruction) for the duration as detailed below:

Has been found to be a proficient hand for steering the ship

Master

Date

.....

.....

mv/ss

.....

Owned by

.....

Ship's Official Stamp

A. Steering by (magnetic/gyro) compass by day

..... hours

B. Steering by (magnetic/gyro) compass by night

..... hours

C. Steering by sight

..... hours

D. Steering while entering and leaving port

..... hours

SIXTH SHIP

STEERING CERTIFICATE

Enrollment No.

Surname

Other Names

.....

.....

Seafarer's Book No.

Signature of Cadet

.....

.....

THIS IS TO CERTIFY THAT THE ABOVE-NAMED CADET HAS BEEN UNDER TRAINING ON

SHIP NAME:

From

To

.....

.....

.....

During this period the cadet took turns at the helm for steering the vessel. From the records and during training on this ship it is confirmed that the cadet has taken turns at the wheel in steering the ship (apart from periods of instruction) for the duration as detailed below:

Has been found to be a proficient hand for steering the ship

Master

Date

.....

.....

mv/ss

.....

Owned by

.....

Ship's Official Stamp

A. Steering by (magnetic/gyro) compass by day

..... hours

B. Steering by (magnetic/gyro) compass by night

..... hours

C. Steering by sight

..... hours

D. Steering while entering and leaving port

..... hours

SECTION 9 PROJECT WORK

INTRODUCTION

The goal of conducting assignments during sea service is to assure that you gradually acquire awareness of the ships you would operate and the equipment and life-saving devices on board.

Intelligent observation, initiative and reference, where necessary, to ship plans and other details in addition to the manufacturer's operation instructions and manuals, will be required to achieve this desired objective effectively. In addition, in a variety of situations, it will be important to seek the support, guidance and advice of your officers to obtain the necessary information.

Most of the projects are concerned with obtaining accurate information concerning such issues as the structural features and devices of the ship, as well as the various supply systems - bunker fuel, fresh water, and salt water, etc.

The technical precision of each project will be reviewed by the Master of the ship and assessed by your company and/or your Nautical College. The assessment process will take the following into consideration:

- (a) Precision of information/details validity in written text, descriptions, or calculations;
- (b) Topic analysis showing the breadth of the study and the clear presentation of the facts;
- (c) Neatness of writing diagrams / labels: and
- (d) Spelling and grammar.

INSTRUCTIONS

1. Before commencing each project determine the type of information required, i.e., written, with a full description, and demonstration of understanding.
2. Begin each project on a separate page and state the Name of Ship, Project Title, Date Commenced and Date Completed.
3. If not using a computer, use pens for written text and calculations and pencils for illustrations, which are to be drawn roughly to scale. Colors should be used whenever possible.
4. Your project work should be handed to the master for inspection at the same time as you present this Training Record Book.
5. Completed project work should be submitted either to the company or to your college. You will be advised accordingly.

1. Scale Drawings

Draw approximately to scale:

- a) A longitudinal section through the center line of your ship showing and naming cargo holds/tanks, bunker, ballast, forepeak, aft peak, slop tanks, ROT tanks, and all other compartments/spaces;
- b) A plan of the wheelhouse showing the position and the name of all the navigational equipment, communication equipment and fixed instruments;
- c) A plan of each of two other decks showing and naming accommodation, storerooms, firefighting equipment, etc. and;
- d) A plan of all firefighting equipment, including piping arrangement on Deck and Engine room.

2. Navigation

Write a short report describing the different types of aid to navigation carried on your ship. Explain the role that ECDIS, RADAR, and GMDSS Equipment have and what plans are in place in circumstances of operation failure.

3. Safety

On the deck plans drawn for 1 (c) above:

- a) Show the location by key letters of each type of life-saving appliances and firefighting equipment; and
- b) List the above key letters used in (a) and alongside each one gives a brief description of each item.

4. Pipeline Systems

For cadets serving in ships other than tankers:

Draw a diagram of the bilge, double bottom, fore and after peak, and other water ballast pipeline systems, indicating the positions of all valves. Briefly describe the pump(s) used.

For cadets serving in tankers:

- a) Draw a diagram of the cargo pipeline system (excluding the pump room), indicating the position of all valves by color code or other means to indicate their function. Briefly describe one of the cargo pumps.
- b) Draw a diagram of all Inert Gas system on board the vessel and describe the function of each component.

For cadets serving on Gas Vessels:

- a) Draw a diagram of the cargo pipeline system, indicating the position of all valves by color code or other means to indicate their function. Briefly describe one of the cargo pumps.
- b) Draw a diagram of all Inert Gas system on board the vessel and describe the function of each component.

5. Cargo Work

- a) Provide a description of a cargo loading and discharging operation in which you have participated;
- b) Demonstrate understanding and the requirement of developing of cargo loading/ discharge plans;
- c) All the safety and precautionary measures taken during loading and discharging;
- d) Describe areas for inspection during the safety round while the vessel is in cargo operation; and
- e) Describe methods of calculation carried out for cargo measurements.

6. Mooring

- a) Draw, approximately to scale, a deck plan of your ship showing the position of fairleads, winches/capstans, windlass and highlight the particularly hazardous areas. On this plan show the leads of mooring rope and wires at a port you have visited;
- b) Give a brief description of a berthing or unberthing operation involving your ship;
- c) Give a brief description of berthing at SPMB and ship to ship operation;
- d) Describe safety precautionary measures taken during mooring operations; and
- e) Describe the risks involved in carrying out mooring operations.

SECTION 10 TASK SUMMARY CHART

OFFICERS IN CHARGE OF A NAVIGATIONAL WATCH

The purpose of the summary chart is to provide a guide and continuous check on the numbers of tasks or duties listed in Section 7 that have been completed, and those that remain outstanding. Tick off only those tasks which have been completed.

In the charts below, the tinted boxes simply indicate the start of a new group of tasks or duties.

FUNCTION – Navigation at the Operational Level

- 1) **COMPETENCE** - Plan and conduct a passage and determine position.

1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	1.1.7	1.1.8	1.1.9	1.2.1	1.2.2	1.2.3
1.2.4	1.2.5	1.3.1	1.3.2	1.3.3	1.3.4	1.3.5	1.4.1	1.5.1	1.5.2	1.5.3	1.5.4
1.5.5	1.6.1	1.6.2	1.6.3	1.6.4	1.6.5	1.6.6	1.7.1	1.7.2	1.7.3	1.7.4	1.8.1
1.8.2	1.8.3	1.8.4	1.9.1	1.9.2	1.9.3	1.9.4	1.9.5	1.9.6	1.9.7	1.9.8	1.9.9
1.9.10	1.9.11	1.9.12	1.9.13	1.9.14	1.9.15	1.9.16	1.10.1	1.10.2	1.10.3	1.10.4	1.10.5
1.10.6	1.10.7										

2) **COMPETENCE** - Maintain a safe navigational watch

2.1.1	2.1.2	2.1.3	2.1.4	2.1.5	2.1.6	2.1.7	2.2.1	2.2.2	2.2.3	2.2.4	2.2.5
2.2.6	2.3.1	2.3.2	2.3.3	2.3.4	2.3.5	2.4.1	2.4.2	2.4.3	2.4.4	2.4.5	2.4.6
2.4.7	2.4.8	2.4.9	2.4.10	2.5.1	2.5.2	2.5.3	2.5.4	2.5.5	2.5.6	2.5.7	2.5.8
2.6.1	2.6.2	2.6.3	2.6.4	2.6.5	2.6.6	2.6.7	2.6.8				

3) **COMPETENCE** - Use of radar and ARPA to maintain the safety of navigation

3.1.1	3.1.2	3.1.3	3.1.4	3.1.5	3.2.1	3.2.2	3.2.3	3.3.1	3.3.2	3.3.3	3.3.4
3.4.1	3.4.2	3.4.3									

4) **COMPETENCE** - Use of ECDIS to maintain the safety of navigation

4.1.1	4.1.2	4.1.3	4.1.4	4.1.5	4.1.6	4.1.7	4.1.8	4.2.1	4.2.2	4.2.3	4.2.4
4.2.5	4.2.6	4.2.7	4.2.8	4.2.9	4.3.1	4.3.2	4.3.3	4.3.4	4.3.5		

5) **COMPETENCE** - Respond to Emergencies

5.1.1	5.1.2	5.1.3	5.1.4	5.1.5	5.1.6	5.1.7	5.1.8	5.1.9	5.1.10	5.1.11	5.2.1
5.2.2	5.2.3	5.3.1	5.3.2	5.3.3	5.3.4	5.3.5					

6) **COMPETENCE** - Respond to a distress signal at sea

6.1.1	6.1.2	6.1.3	6.1.4	6.1.5	6.1.6	6.1.7	6.2.1	6.2.2	6.2.3	6.2.4	6.3.1
6.3.2											

7) **COMPETENCE** - Use of IMO Standard Marine Communication Phrases and use English in written and oral form

7.1.1	7.1.2	7.2.1	7.2.2	7.3.1	7.3.2	7.3.3	7.3.4	7.3.5	7.3.6	7.3.7	7.3.8
7.4.1	7.4.2	7.4.3	7.4.4	7.4.5	7.5.1	7.5.2	7.5.3				

8) **COMPETENCE** - Transmit and receive information by visual signaling

8.1.1	8.1.2	8.2.1	8.2.2	8.2.3	8.2.4

9) **COMPETENCE** - Manoeuvre the ship

9.1.1	9.1.2	9.1.3	9.1.4	9.1.5	9.1.6	9.1.7	9.1.8	9.2.1	9.2.2	9.2.3	9.2.4
9.2.5	9.2.6	9.2.7	9.2.8	9.2.9	9.2.10	9.2.11	9.2.12	9.2.13	9.2.14	9.2.15	9.2.16
9.2.17	9.2.18	9.2.19	9.2.20	9.2.21	9.2.22	9.2.23	9.2.24	9.2.25	9.3.1	9.3.2	

FUNCTION - Cargo Handling and Stowage at the Operational Level

10) **COMPETENCE** - Monitor the loading, stowage, securing care during the voyage and the unloading of cargoes

10.1.1	10.1.2	10.1.3	10.1.4	10.1.5	10.1.6	10.1.7	10.1.8	10.1.9	10.1.10	10.2.1	10.2.2
10.2.3	10.2.4	10.2.5	10.2.6	10.2.7	10.2.8	10.2.9	10.2.10	10.2.11	10.3.1	10.3.2	10.3.3
10.3.4	10.3.5	10.3.6	10.3.7	10.3.8	10.3.9	10.3.10	10.3.11	10.3.12	10.3.13	10.3.14	10.3.15
10.3.16	10.3.17	10.3.18	10.3.19	10.3.20	10.3.21	10.4.1	10.4.2	10.4.3	10.4.4	10.4.5	10.5.1
10.5.2	10.6.1	10.6.2	10.6.3	10.6.4	10.6.5	10.6.6	10.7.1	10.7.2	10.7.3	10.7.4	10.7.5
10.7.6	10.7.7	10.7.8	10.7.9	10.7.10	10.7.11	10.7.12	10.7.13	10.7.14	10.7.15	10.7.16	10.7.17
10.8.1	10.8.2	10.8.3	10.8.4	10.9.1	10.9.2	10.9.3	10.10.1	10.10.2	10.10.3	10.11.1	10.11.2
10.11.3	10.11.4	10.11.5	10.11.6	10.11.7	10.11.8	10.11.9	10.12.1	10.12.2	10.12.3	10.12.4	10.13.1
10.13.2	10.13.3	10.13.4	10.13.5	10.13.6	10.14.1						

FUNCTION - Security In compliance with ISPS Code

11) **COMPETENCE** - Security Awareness

11.1.1	11.1.2	11.1.3	11.1.4	11.1.5	11.1.6	11.1.7

FUNCTION - Cargo Handling and Stowage - Additional Tasks for Tankers

12) **COMPETENCE** - Monitor loading of cargoes (tankers)

12.1.1	12.1.2	12.1.3	12.1.4	12.1.5	12.1.6	12.1.7	12.1.8	12.1.9	12.1.10	12.1.11	12.1.12
12.1.13	12.1.14	12.1.15	12.1.16	12.2.1	12.2.2	12.2.3	12.2.4	12.2.5	12.2.6	12.2.7	12.2.8
12.2.9	12.2.10	12.2.11	12.2.12								

13) **COMPETENCE** - Monitor discharging of cargoes (tankers)

13.1.1	13.1.2	13.1.3	13.1.4	13.1.5	13.1.6	13.1.7	13.1.8	13.1.9	13.1.10	13.1.11	13.1.12
13.1.13	13.1.14	13.1.15	13.1.16	13.1.17	13.1.18	13.1.19	13.1.20	13.1.21	13.1.22	13.2.1	13.2.2
13.2.3	13.2.4	13.2.5	13.2.6	13.2.7	13.2.8	13.2.9	13.2.10	13.2.11	13.2.12	13.2.13	13.2.14
13.2.15	13.2.16										

14) **COMPETENCE** - Maintain and overhaul cargo systems and associated equipment (tankers)

14.1.1	14.1.2	14.1.3	14.1.4	14.1.5	14.1.6	14.1.7	14.1.8	14.1.9	14.1.10	14.1.11	14.1.12
14.1.13	14.1.14	14.1.15	14.1.16	14.1.17	14.1.18	14.1.19	14.1.20				

15) **COMPETENCE** - Cargo Operations (tankers)

15.1.1	15.1.2	15.1.3	15.1.4	15.1.5	15.1.6	15.1.7	15.1.8	15.1.9	15.1.10	15.1.11	15.1.12
15.1.13	15.1.14	15.1.15	15.1.16	15.1.17	15.1.18	15.1.19	15.1.20	15.1.21	15.1.22	15.1.23	15.1.24
15.1.25	15.2.1	15.2.2	15.2.3	15.2.4	15.2.5	15.2.6	15.2.7	15.2.8	15.2.9	15.2.10	15.2.11
15.2.12	15.2.13										

FUNCTION - Controlling the Operation of the Ship and Care for Persons on Board at the Operational Level

16) **COMPETENCE** - Ensure compliance with pollution prevention requirements

16.1.1	16.1.2	16.1.3	16.1.4	16.1.5	16.1.6	16.1.7	16.1.8	16.1.9	16.1.10	16.1.11	16.1.12
16.1.13	16.1.14	16.2.1	16.2.2	16.2.3	16.2.4	16.3.1	16.4.1	16.4.2	16.4.3	16.5.1	16.5.2
16.6.1	16.6.2	16.6.3									

17) **COMPETENCE** - Maintain seaworthiness of the ship

17.1.1	17.1.2	17.1.3	17.1.4	17.1.5	17.1.6	17.1.7	17.1.8	17.1.9	17.1.10	17.1.11	17.1.12
--------	--------	--------	--------	--------	--------	--------	--------	--------	---------	---------	---------

17.1.13	17.1.14	17.2.1	17.2.2	17.2.3	17.3.1	17.3.2	17.3.3				

18) **COMPETENCE** - Prevent, control and fight fires onboard

18.1.1	18.1.2	18.1.3	18.1.4	18.1.5	18.1.6	18.1.7	18.1.8	18.1.9	18.1.10	18.1.11	18.1.12
18.1.13	18.1.14	18.2.1	18.2.2	18.3.1	18.3.2	18.3.3	18.3.4	18.3.5	18.3.6	18.4.1	18.4.2
18.4.3	18.4.3	18.4.4	18.4.5	18.4.6	18.4.7	18.4.8	18.4.9	18.4.10	18.4.11	18.4.12	18.4.13
18.5.1	18.5.2	18.5.3	18.5.4	18.5.5	18.5.6	18.5.7	18.5.8	18.6.1	18.6.2	18.6.3	

19) **COMPETENCE** - Operate life-saving appliances

19.1.1	19.1.2	19.1.3	19.1.4	19.1.5	19.1.6	19.1.7	19.1.8	19.1.9	19.1.10	19.1.11	19.1.12
19.1.13	19.1.14	19.1.15	19.1.16	19.1.17	19.2.1	19.2.2	19.2.3	19.2.4	19.2.5	19.2.6	19.2.7
19.2.8	19.2.9	19.3.1	19.3.2	19.4.1	19.5.1	19.5.2	19.5.3	19.5.4	19.5.5	19.5.6	19.5.7
19.5.8	19.5.9	19.5.10	19.5.11	19.5.12	19.5.13						

20) **COMPETENCE** - Apply medical first aid on board ship

20.1.1	20.1.2	20.1.3	20.1.4	20.1.5	20.1.6	20.2.1	20.2.2	20.3.1	20.3.2	20.3.3	20.3.4
20.3.5											

21) **COMPETENCE** - Monitor compliance with legislative requirements

21.1.1	21.1.2	21.1.3	21.1.4	21.2.1	21.3.1	21.3.2	21.3.3	21.3.4	21.3.5	21.3.6	21.3.7
21.2.8	21.2.9	21.2.10	21.2.11	21.3.12							

22) **COMPETENCE** - Application of Leadership and Team Working skills

22.1.1	22.1.2	22.1.3	22.1.4	22.1.5	22.1.6	22.1.7	22.1.8	22.2.1	22.2.2	22.2.3	22.2.4
22.2.5											

Appendix 3: APEC SEN Onboard Training Record Book for Engine Cadets



ON BOARD TRAINING RECORD BOOK

ON A VESSEL OF 500 GROSS TONNAGE AND ABOVE

This training record book was compiled on the basis of the competence requirements of the STCW Convention, 1978, as amended and maritime industry standards and guidelines and other requirements of flag States' additional to the minimum standards of the STCW Convention including the 2010 amendments to the Convention and Code.

APEC SEN



NAME:

.....

HOME ADDRESS:

.....

.....

DATE TRAINING STARTED

.....

INTRODUCTION

The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978 was amended in 2010 and subsequently in 2016 and 2017.

This Training Record Book takes careful account of the 2010 and subsequent amendments to the STCW Convention, 1978, as amended, the current standards for cadets, including additional competencies for industry guidelines issued by several Maritime Associations and Councils, Best Practices by Major Shipping Companies, Flag States requirements in addition to STCW Convention.

The updates included in this record book focus on cadets' ability to discharge their duties competently and achieve the highest standards of competency in the different maritime skills needed to serve as a watch keeping officer on board upon obtaining the certificate of competency. The STCW Convention, 1978, as amended requires the documentation of onboard training of cadets within a structured training programme in a training record book as documentary evidence of completion of, and compliance with, an approved structured training programme, in addition to any industry requirements of guidelines issued by industry organizations such as Maritime Associations and Councils, Best Practices by major shipping companies, flag States in addition to requirements of the STCW Convention, 1978, as amended.

The tasks in this book have been specifically planned to ensure that trainees follow the qualification criteria for the competencies set out in the STCW Code and that, the onboard training officers monitoring their performance use appraisal criteria based on the STCW Code utmost. Although, the tasks were planned to take into account that it is on board training and for certain cases, the tasks and the related requirements are discussed in greater depth than in the STCW Code. The tasks are also planned, to make sure that trainees make the most practicable use of their seagoing service and to enable trainees' onboard supervisors to make an accurate determination about trainees' performance.

Keep in mind that in order to be certificated as a navigational officer on watch on vessels of a gross tonnage of 500 and above, it is not only required to complete this training record book and, its delivery to the relevant authority does not in itself represent an official evaluation of the trainee's competence. Nevertheless, the completion of the On-Board Training Record Book should contain detailed information to provide documentary evidence that the trainee has undergone on-board training within a structured training program, and demonstrated knowledge, understanding and proficiency of all the competencies required by the STCW Code.

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SECTION 1 METHODOLOGY

This training record book will provide verifiable documentary evidence that a cadet has gained the knowledge, understanding and proficiency required to be certificated as a watchkeeping engineer officer in compliance with the STCW Convention, 1978, as amended, and has also gained knowledge and understanding of guidelines on best practices issued by industry associations and flag States' requirements additional to the minimum standards in the STCW Convention, 1978, as amended pursued through a formal training schedule. Thus, it is critical that cadets should follow these guidelines diligently to make the most of their training opportunity at sea.

The proper completion of this book is crucial because it will be submitted to their maritime training colleges' examiners and instructors and be verified and utilized during the assessment by the Administration during the process for awarding a certificate of competency to those who will be deemed competent by the Administration's assessors.

When cadets are assigned on board for onboard training, the training record book will be scrutinized by the masters of the ships served by the cadet, on board training officers and the shipping company before being signed off.

COMPLETION GUIDE

At the time the trainee receives this training record book she/he will be personally responsible for keeping it safe throughout training so she/he can fill-in the details required on the following pages to comply with the structured training approved programme required by the STCW Convention.

- Section 3: After the trainee joins each ship, she/he should fill-in the details of compulsory safety orientation and training immediately after the shipboard familiarization training has been completed. The designated training officer on board should sign that mandatory orientation as required has been undertaken.

Immediately after the trainee joins each ship:

- Section 4 on the vessel's technical details, should be completed by the trainee. The chief engineer and the designated training officer on board each ship should provide an opportunity for this exercise to take place.
- The designated on-board training officer will review this Book in order to examine the trainee's progress. A strategy will be set in place to ensure that the competencies required need to be demonstrated.

During the cadet's seagoing service:

- Section 7, which contains a list of on-board training tasks, should be progressively completed. Additional guidance on recording progress is given at the start of Section 6. Special attention should also be given to the completion of Section 5 concerning safety at work.
- Trainees should progressively fill in the task summary chart in section 9.
- The Training Record Book will be assigned to the training officer on board on each joining ship and then, as far as the voyage schedule allows, every week to record comments on pages 12-17.
- The Training Record Book will be sent to the Chief Engineer for review every month and at the end of each voyage. The comments of the Chief Engineer should be registered, dated, and signed on pages 18-19. Comments can only apply to the knowledge and functional development of the cadets.
- The shipping company will also check the Training Record Book. Comments should be recorded on page 20 of this document.
- Cadets are expected to finish several written projects, some of which can be found in section 8.
- A detailed record of the seagoing activity of the trainee will be maintained, along with the time spent on engine-room watch keeping duties and practical training.

SECTION 2 PROGRESS RECORD

CADET'S PERSONAL INFORMATION (to be completed by cadets)

Cadet Full Name

Seafarer's Book No..... Date of Birth

Home Address

.....

Change of Address (if applicable)

.....

Company Name

Address

Cadet Agreement:

Started Date Finished Date

Change of Company (if applicable)

Address

Date of Change Finished Date

PHOTO

TRAINING PROGRAMMES

College Phase		
Training Program	From	To
Sea Phase		
Training Program	From	To
Occupational or workshop Training Programs		
Training Program	From	To

BASIC TRAINING as required by Section A-V1/1 paragraph 2 of the STCW Code

Completed Basic Training as part of mandatory pre-sea training. Fill in the details below:

	Date	Location	Document Number
Personal Survival Techniques			
Fire Prevention and Firefighting			
Elementary First Aid			
Personal Safety and Social Responsibilities			

SHIPBOARD SEA TIME RECORD OF SERVICE

SHIP NAME	IMO Number	Dates		Time Spent on Engine room Watchkeeping Functions		Voyage Total – Seagoing Service	
		Sign on	Sign Off	Months	Days	Months	Days
Total Service							

DESIGNATED ONBOARD TRAINING OFFICER'S REVIEW OF CADET TRAINING PROGRESS

This table should be completed at least once a week or more as the trading of the vessel allows.

Comments should NOT refer to character and should only relate to the cadet's training, practical progress and competence.

Ship Name	Comments	Name, Certificate No. and Place of issue	Initials	Date

CONTINUE - DESIGNATED ONBOARD TRAINING OFFICER'S REVIEW OF CADET TRAINING PROGRESS

Ship Name	Comments	Name, Certificate No. and Place of issue	Initials	Date

CONTINUE - DESIGNATED ONBOARD TRAINING OFFICER'S REVIEW OF CADET TRAINING PROGRESS

Ship Name	Comments	Name, Certificate No. and Place of issue	Initials	Date

CONTINUE - DESIGNATED ONBOARD TRAINING OFFICER'S REVIEW OF CADET TRAINING PROGRESS

Ship Name	Comments	Name, Certificate No. and Place of issue	Initials	Date

CONTINUE - DESIGNATED ONBOARD TRAINING OFFICER'S REVIEW OF CADET TRAINING PROGRESS

Ship Name	Comments	Name, Certificate No. and Place of issue	Initials	Date

CONTINUE - DESIGNATED ONBOARD TRAINING OFFICER'S REVIEW OF CADET TRAINING PROGRESS

Ship Name	Comments	Name, Certificate No. and Place of issue	Initials	Date

CHIEF ENGINEER'S MONTHLY INSPECTION OF RECORD BOOK

Comments should NOT refer to character and should only relate to the cadet's training, practical progress and competence.

Ship	Comments	Chief Engineer's Name, Certificate No. and Place of issue	Chief Engineer's Initials	Date	Ship's Official Stamp

CONTINUED - CHIEF ENGINEER'S MONTHLY INSPECTION OF RECORD BOOK

Comments should NOT refer to character and should only relate to the cadet's training, practical progress and competence.

Ship	Comments	Chief Engineer's Name, Certificate No. and Place of issue	Chief Engineer's Initials	Date	Ship's Official Stamp

COMPANY'S INSPECTION OF RECORD BOOK

Comments should NOT refer to character and should only relate to the cadet's training, practical progress and competence.

Comments	Name and position of company's training personal	Initials	Date

SECTION 3 COMPULSORY SAFETY AND SHIPBOARD FAMILIARIZATION

Safety Familiarization as required by STCW Code, Section A-V1/1 paragraph 1

Prior to assignment to shipboard duties all seafarers must be familiarized with basic safety to know what to do in an emergency. The chief engineer or responsible officer on each ship should sign and date below to signify that the cadet has received training or instruction to be able to carry out the following tasks or duties.

FIRST SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
Demonstrate communication skills with other persons on board on elementary safety matters			
Demonstrate understanding of safety information symbols, signs and alarm signals			
Demonstrate knowledge and understanding of: A person falls overboard Fire or smoke is detected The fire or abandon ship alarm is sounded			
Demonstrate knowledge and understanding of identifying muster and embarkation stations and emergency escape routes			
Demonstrate knowledge and understanding of locating and donning life jackets and survival suits			
Demonstrate knowledge and understanding of raising the alarm and have a basic knowledge of the use of portable fire extinguishers			
Demonstrate knowledge and understanding of taking immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board			
Demonstrate knowledge and understanding of closing and opening the fire, weathertight and watertight doors fitted in the particular ship, other than those for hull openings			

SECOND SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
Demonstrate communication skills with other persons on board on elementary safety matters			
Demonstrate understanding of safety information symbols, signs and alarm signals			
Demonstrate knowledge and understanding of: A person falls overboard Fire or smoke is detected The fire or abandon ship alarm is sounded			
Demonstrate knowledge and understanding of identifying muster and embarkation stations and emergency escape routes			
Demonstrate knowledge and understanding of locating and donning life jackets and survival suits			
Demonstrate knowledge and understanding of raising the alarm and have a basic knowledge of the use of portable fire extinguishers			
Demonstrate knowledge and understanding of taking immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board			
Demonstrate knowledge and understanding of closing and opening the fire, weathertight and watertight doors fitted in the particular ship, other than those for hull openings			

THIRD SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
Demonstrate communication skills with other persons on board on elementary safety matters			
Demonstrate understanding of safety information symbols, signs and alarm signals			
Demonstrate knowledge and understanding of: A person falls overboard Fire or smoke is detected The fire or abandon ship alarm is sounded			
Demonstrate knowledge and understanding of identifying muster and embarkation stations and emergency escape routes			
Demonstrate knowledge and understanding of locating and donning life jackets and survival suits			
Demonstrate knowledge and understanding of raising the alarm and have a basic knowledge of the use of portable fire extinguishers			
Demonstrate knowledge and understanding of taking immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board			
Demonstrate knowledge and understanding of closing and opening the fire, weathertight and watertight doors fitted in the particular ship, other than those for hull openings			

FOURTH SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
Demonstrate communication skills with other persons on board on elementary safety matters			
Demonstrate understanding of safety information symbols, signs, and alarm signals			
Demonstrate knowledge and understanding of: A person falls overboard Fire or smoke is detected The fire or abandon ship alarm is sounded			
Demonstrate knowledge and understanding of identifying muster and embarkation stations and emergency escape routes			
Demonstrate knowledge and understanding of locating and donning life jackets and survival suits			
Demonstrate knowledge and understanding of raising the alarm and have a basic knowledge of the use of portable fire extinguishers			
Demonstrate knowledge and understanding of taking immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board			
Demonstrate knowledge and understanding of closing and opening the fire, weathertight and watertight doors fitted in the particular ship, other than those for hull openings			

FIFTH SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
Demonstrate communication skills with other persons on board on elementary safety matters			
Demonstrate understanding of safety information symbols, signs and alarm signals			
Demonstrate knowledge and understanding of: A person falls overboard Fire or smoke is detected The fire or abandon ship alarm is sounded			
Demonstrate knowledge and understanding of identifying muster and embarkation stations and emergency escape routes			
Demonstrate knowledge and understanding of locating and donning life jackets and survival suits			
Demonstrate knowledge and understanding of raising the alarm and have a basic knowledge of the use of portable fire extinguishers			
Demonstrate knowledge and understanding of taking immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board			
Demonstrate knowledge and understanding of closing and opening the fire, weathertight and watertight doors fitted in the particular ship, other than those for hull openings			

SIXTH SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
Demonstrate communication skills with other persons on board on elementary safety matters			
Demonstrate understanding of safety information symbols, signs and alarm signals			
Demonstrate knowledge and understanding of: A person falls overboard Fire or smoke is detected The fire or abandon ship alarm is sounded			
Demonstrate knowledge and understanding of identifying muster and embarkation stations and emergency escape routes			
Demonstrate knowledge and understanding of locating and donning life jackets and survival suits			
Demonstrate knowledge and understanding of raising the alarm and have a basic knowledge of the use of portable fire extinguishers			
Demonstrate knowledge and understanding of taking immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board			
Demonstrate knowledge and understanding of closing and opening the fire, weathertight and watertight doors fitted in the particular ship, other than those for hull openings			

SHIPBOARD FAMILIARIZATION as required by Regulation 1/14 of the STCW Convention

The location of safety and emergency equipment differs from ship to ship. Seafarers should be familiar with their duties and all ship arrangements, installations, equipment procedures and ship characteristics that are relevant to routine or emergency duties. Cadets should complete the following tasks or duties as soon as possible on joining the ship.

FIRST SHIP

Ship's Name				
Task/Duty	Training Officer	Sign	Date	
A- Watchkeeping procedures and arrangements:				
Visit engine room (ER) and other work areas				
Understudy main and auxiliary engines and other engine room equipment and displays.				
Activate equipment to be used in routine duties, under supervision				
B- Safety and Emergency procedures				
Read and demonstrate an understanding of your Company's Fire and Safety Regulations				
Demonstrate recognition of the alarm for: <ul style="list-style-type: none"> • FIRE • EMERGENCY • ABANDON SHIP • ENGINE ROOM CO₂ RELEASE 				
Locate engine room medical and first aid equipment				
Locate fire-fighting equipment: alarm activating points, alarm bells, extinguishers, hydrants, breathing apparatus, fire-fighter's outfits, and hoses				
Locate rocket line throwing apparatus				
Locate distress rockets, flares, and other pyrotechnics				

CONTINUE - SHIPBOARD FAMILIARIZATION as required by Regulation 1/14 of the STCW Convention

Ship's Name			
Task/Duty	Training Officer	Sign	Date
B- (Continue) Safety and Emergency procedures			
Locate Breathing apparatus and firefighter's outfits, etc.			
Locate EPIRB, SART and VHF radios for use in emergency			
Locate Emergency Escape Breathing Devices (EEBD's)			
Locate CO2 bottle room, and release points and control valves for machinery spaces, engine room, pump rooms, cargo tanks and holds			
Locate and understand the operation of the emergency fire pump, emergency generator and emergency compressor			
Locate and understand the operation of the emergency deck stops for main engines, fire flaps, ventilation, fuel oil valve and other emergency stop valves			
Demonstrate the significance and contents of the 'Fire Control Plan', describe how to keep the Fire Control Plan updated at all times.			
C- Environmental Protection			
Understudy the procedure for handling garbage, rubbish, and other wastes			
Understudy the use of garbage compactor or other equipment as appropriate			
Understanding the use of Anti-Pollution equipment and chemicals			
Handling of oily bilge water and oil wastes			

CONTINUE - SHIPBOARD FAMILIARIZATION as required by Regulation 1/14 of the STCW Convention

Ship's Name			
Task/Duty	Training Officer	Sign	Date
D- Health Protection			
State the risks and hazards when handling chemicals on board			
Demonstrate a knowledge of the following terms: <ul style="list-style-type: none"> • Toxicity • Asphyxia • Corrosiveness 			
State the Drug and Alcohol (D&A) policy of the company			
Identify the list of approved chemicals, lubricants, and gases to be used onboard			

SECOND SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
A- Watchkeeping procedures and arrangements:			
Visit engine room (ER) and other work areas			
Understudy main and auxiliary engines and other engine room equipment and displays.			
Activate equipment to be used in routine duties, under supervision			
B- Safety and Emergency procedures			
Read and demonstrate an understanding of your Company's Fire and Safety Regulations			
Demonstrate recognition of the alarm for: <ul style="list-style-type: none"> • FIRE • EMERGENCY • ABANDON SHIP • ENGINE ROOM CO, RELEASE 			
Locate engine room medical and first aid equipment			
Locate fire-fighting equipment: alarm activating points, alarm bells, extinguishers, hydrants, breathing apparatus, fire-fighter's outfits and hoses			
Locate rocket line throwing apparatus			
Locate distress rockets, flares and other pyrotechnics			

CONTINUE - SHIPBOARD FAMILIARIZATION as required by Regulation 1/14 of the STCW Convention

Ship's Name			
Task/Duty	Training Officer	Sign	Date
B- (Continue) Safety and Emergency procedures			
Locate Breathing apparatus and firefighter's outfits, etc.			
Locate EPIRB, SART and VHF radios for use in emergency			
Locate Emergency Escape Breathing Devices (EEBD's)			
Locate CO2 bottle room, and release points and control valves for machinery spaces, engine room, pump rooms, cargo tanks and holds			
Locate and understand the operation of the emergency fire pump, emergency generator and emergency compressor			
Locate and understand the operation of the emergency deck stops for main engines, fire flaps, ventilation, fuel oil valve and other emergency stop valves			
Demonstrate the significance and contents of the 'Fire Control Plan', describe how to keep the Fire Control Plan updated at all times.			
C- Environmental Protection			
Understudy the procedure for handling garbage, rubbish, and other wastes			
Understudy the use of garbage compactor or other equipment, as appropriate			
Understanding the use of Anti-Pollution equipment and chemicals			
Handling of oily bilge water and oil wastes			

CONTINUE - SHIPBOARD FAMILIARIZATION as required by Regulation 1/14 of the STCW Convention

Ship's Name			
Task/Duty	Training Officer	Sign	Date
D- Health Protection			
State the risks and hazards when handling chemicals on board			
Demonstrate a knowledge of the following terms: <ul style="list-style-type: none"> • Toxicity • Asphyxia • Corrosiveness 			
State the Drug and Alcohol (D&A) policy of the company			
Identify the list of approved chemicals, lubricants, and gases to be used onboard			

THIRD SHIP

Ship's Name				
Task/Duty	Training Officer	Sign	Date	
A- Watchkeeping procedures and arrangements:				
Visit engine room (ER) and other work areas				
Understudy main and auxiliary engines and other engine room equipment and displays.				
Activate equipment to be used in routine duties, under supervision				
B- Safety and Emergency procedures				
Read and demonstrate an understanding of your Company's Fire and Safety Regulations				
Demonstrate recognition of the alarm for: <ul style="list-style-type: none"> • FIRE • EMERGENCY • ABANDON SHIP • ENGINE ROOM CO, RELEASE 				
locate engine room medical and first aid equipment				
Locate fire-fighting equipment: alarm activating points, alarm bells, extinguishers, hydrants, breathing apparatus, fire-fighter's outfits and hoses				
Locate rocket line throwing apparatus				
Locate distress rockets, flares and other pyrotechnics				

CONTINUE - SHIPBOARD FAMILIARIZATION as required by Regulation 1/14 of the STCW Convention

Ship's Name			
Task/Duty	Training Officer	Sign	Date
B- (Continue) Safety and Emergency procedures			
Locate Breathing apparatus and firefighter's outfits, etc.			
Locate EPIRB, SART and VHF radios for use in emergency			
Locate Emergency Escape Breathing Devices (EEBD's)			
locate CO2 bottle room, and release points and control valves for machinery spaces, engine room, pump rooms, cargo tanks and holds			
Locate and understand the operation of the emergency fire pump, emergency generator and emergency compressor			
Locate and understand the operation of the emergency deck stops for main engines, fire flaps, ventilation, fuel oil valve and other emergency stop valves			
Demonstrate the significance and contents of the 'Fire Control Plan', describe how to keep the Fire Control Plan updated at all times.			
C- Environmental Protection			
Understudy the procedure for handling garbage, rubbish, and other wastes			
Understudy the use of garbage compactor or other equipment as appropriate			
Understanding the use of Anti-Pollution equipment and chemicals			
Handling of oily bilge water and oil wastes			

CONTINUE - SHIPBOARD FAMILIARIZATION as required by Regulation 1/14 of the STCW Convention

Ship's Name			
Task/Duty	Training Officer	Sign	Date
D- Health Protection			
State the risks and hazards when handling chemicals on board			
Demonstrate a knowledge of the following terms: <ul style="list-style-type: none"> • Toxicity • Asphyxia • Corrosiveness 			
State the Drug and Alcohol (D&A) policy of the company			
Identify the list of approved chemicals, lubricants, and gases to be used onboard			

FOURTH SHIP

Ship's Name				
Task/Duty	Training Officer	Sign	Date	
A- Watchkeeping procedures and arrangements:				
Visit engine room (ER) and other work areas				
Understudy main and auxiliary engines and other engine room equipment and displays.				
Activate equipment to be used in routine duties, under supervision				
B- Safety and Emergency procedures				
Read and demonstrate an understanding of your Company's Fire and Safety Regulations				
Demonstrate recognition of the alarm for: <ul style="list-style-type: none"> • FIRE • EMERGENCY • ABANDON SHIP • ENGINE ROOM CO, RELEASE 				
locate engine room medical and first aid equipment				
Locate fire-fighting equipment: alarm activating points, alarm bells, extinguishers, hydrants, breathing apparatus, fire-fighter's outfits and hoses				
Locate rocket line throwing apparatus				
Locate distress rockets, flares and other pyrotechnics				

CONTINUE - SHIPBOARD FAMILIARIZATION as required by Regulation 1/14 of the STCW Convention

Ship's Name				
Task/Duty	Training Officer	Sign	Date	
B- (Continue) Safety and Emergency procedures				
Locate Breathing apparatus and firefighter's outfits, etc.				
Locate EPIRB, SART and VHF radios for use in emergency				
Locate Emergency Escape Breathing Devices (EEBD's)				
Locate CO2 bottle room, and release points and control valves for machinery spaces, engine room, pump rooms, cargo tanks and holds				
Locate and understand the operation of the emergency fire pump, emergency generator and emergency compressor				
Locate and understand the operation of the emergency deck stops for main engines, fire flaps, ventilation, fuel oil valve and other emergency stop valves				
Demonstrate the significance and contents of the 'Fire Control Plan', describe how to keep the Fire Control Plan updated at all times.				
C- Environmental Protection				
Understudy the procedure for handling garbage, rubbish, and other wastes				
Understudy the use of garbage compactor or other equipment as appropriate				
Understanding the use of Anti-Pollution equipment and chemicals				
Handling of oily bilge water and oil wastes				

CONTINUE - SHIPBOARD FAMILIARIZATION as required by Regulation 1/14 of the STCW Convention

Ship's Name			
Task/Duty	Training Officer	Sign	Date
D- Health Protection			
State the risks and hazards when handling chemicals on board			
Demonstrate a knowledge of the following terms: <ul style="list-style-type: none"> • Toxicity • Asphyxia • Corrosiveness 			
State the Drug and Alcohol (D&A) policy of the company			
Identify the list of approved chemicals, lubricants, and gases to be used onboard			

FIFTH SHIP

Ship's Name				
Task/Duty	Training Officer	Sign	Date	
A- Watchkeeping procedures and arrangements:				
Visit engine room (ER) and other work areas				
Understudy main and auxiliary engines and other engine room equipment and displays				
Activate equipment to be used in routine duties, under supervision				
B- Safety and Emergency procedures				
Read and demonstrate an understanding of your Company's Fire and Safety Regulations				
Demonstrate recognition of the alarm for: <ul style="list-style-type: none"> • FIRE • EMERGENCY • ABANDON SHIP • ENGINE ROOM CO, RELEASE 				
locate engine room medical and first aid equipment				
Locate fire-fighting equipment: alarm activating points, alarm bells, extinguishers, hydrants, breathing apparatus, fire-fighter's outfits and hoses				
Locate rocket line throwing apparatus				
Locate distress rockets, flares and other pyrotechnics				

CONTINUE - SHIPBOARD FAMILIARIZATION as required by Regulation 1/14 of the STCW Convention

Ship's Name				
Task/Duty	Training Officer	Sign	Date	
B- (Continue) Safety and Emergency procedures				
Locate Breathing apparatus and firefighter's outfits, etc.				
Locate EPIRB, SART and VHF radios for use in emergency				
Locate Emergency Escape Breathing Devices (EEBD's)				
Locate CO2 bottle room, and release points and control valves for machinery spaces, engine room, pump rooms, cargo tanks and holds				
Locate and understand the operation of the emergency fire pump, emergency generator and emergency compressor				
Locate and understand the operation of the emergency deck stops for main engines, fire flaps, ventilation, fuel oil valve and other emergency stop valves				
Demonstrate the significance and contents of the 'Fire Control Plan', describe how to keep the Fire Control Plan updated at all times				
C- Environmental Protection				
Understudy the procedure for handling garbage, rubbish, and other wastes				
Understudy the use of garbage compactor or other equipment as appropriate				
Understanding the use of Anti-Pollution equipment and chemicals				
Handling of oily bilge water and oil wastes				

CONTINUE - SHIPBOARD FAMILIARIZATION as required by Regulation 1/14 of the STCW Convention

Ship's Name			
Task/Duty	Training Officer	Sign	Date
D- Health Protection			
State the risks and hazards when handling chemicals on board			
Demonstrate a knowledge of the following terms: <ul style="list-style-type: none"> • Toxicity • Asphyxia • Corrosiveness 			
State the Drug and Alcohol (D&A) policy of the company			
Identify the list of approved chemicals, lubricants, and gases to be used onboard			

SIXTH SHIP

Ship's Name			
Task/Duty	Training Officer	Sign	Date
A- Watchkeeping procedures and arrangements:			
Visit engine room (ER) and other work areas			
Understudy main and auxiliary engines and other engine room equipment and displays			
Activate equipment to be used in routine duties, under supervision			
B- Safety and Emergency procedures			
Read and demonstrate an understanding of your Company's Fire and Safety Regulations			
Demonstrate recognition of the alarm for: <ul style="list-style-type: none"> • FIRE • EMERGENCY • ABANDON SHIP • ENGINE ROOM CO, RELEASE 			
Locate engine room medical and first aid equipment			
Locate fire-fighting equipment: alarm activating points, alarm bells, extinguishers, hydrants, breathing apparatus, fire-fighter's outfits and hoses			
Locate rocket line throwing apparatus			
Locate distress rockets, flares and other pyrotechnics			

CONTINUE - SHIPBOARD FAMILIARIZATION as required by Regulation 1/14 of the STCW Convention

Ship's Name			
Task/Duty	Training Officer	Sign	Date
B- (Continue) Safety and Emergency procedures			
Locate Breathing apparatus and firefighter's outfits, etc.			
Locate EPIRB, SART and VHF radios for use in emergency			
Locate Emergency Escape Breathing Devices (EEBD's)			
Locate CO2 bottle room, and release points and control valves for machinery spaces, engine room, pump rooms, cargo tanks and holds			
Locate and understand the operation of the emergency fire pump, emergency generator and emergency compressor			
Locate and understand the operation of the emergency deck stops for main engines, fire flaps, ventilation, fuel oil valve and other emergency stop valves			
Demonstrate the significance and contents of the 'Fire Control Plan', describe how to keep the Fire Control Plan updated at all time			
C- Environmental Protection			
Understudy the procedure for handling garbage, rubbish, and other wastes			
Understudy the use of garbage compactor or other equipment as appropriate			
Understanding the use of Anti-Pollution equipment and chemicals			
Handling of oily bilge water and oil wastes			

CONTINUE - SHIPBOARD FAMILIARIZATION as required by Regulation 1/14 of the STCW Convention

Ship's Name			
Task/Duty	Training Officer	Sign	Date
D- Health Protection			
State the risks and hazards when handling chemicals on board			
Demonstrate a knowledge of the following terms: <ul style="list-style-type: none"> • Toxicity • Asphyxia • Corrosiveness 			
State the Drug and Alcohol (D&A) policy of the company			
Identify the list of approved chemicals, lubricants, and gases to be used onboard			

BOAT AND MUSTER STATIONS

Fill-in Boat and Fire Muster Stations' tasks and other details in the following table.

	FIRST SHIP	SECOND SHIP	THIRD SHIP	FOURTH SHIP	FIFTH SHIP	SIXTH SHIP
Ship's Name						
Boat Muster Station						
Fire Muster Station						
Master's Name						
Master's Signature						
Date						

SECTION 5 SAFETY AT WORK

Generally, ships and especially their engine rooms could be considered as hazardous places. Seafarers should take suitable and sufficient safety precautions to decrease the risks of hazards involved.

Although the master is responsible for the ship's general protection and safety of the crew on board, each crew member has a responsibility to always maintain safety and security. Guidance on precautions and safety equipment available on board is to be used.

All engine room activities must at all times be carried out in a safe manner. Be aware, vigilant, alert and safe at all times while working on a ship especially in the engine room. Abide by the specific safety and security rules ensure that appropriate personal protection equipment, work clothes and safety boots are worn always.

Remember that safety comes first, and always use your personal protective equipment such as appropriate work clothes, hard hat, ear protectors, goggles, safety boots and gloves.

Competence: Maintain safe operations						Competence Demonstrated Training Officer (Sign/date)	
Application of safe working practices on board							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Operations, maintenance and repairs are planned and performed in accordance with safety rules and procedures</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate the permits system to work on board		<input type="checkbox"/>		
<input type="checkbox"/>			2. Mention the items to be checked in a work permit		<input type="checkbox"/>		
<input type="checkbox"/>			3. Mention the items to be checked in a hot work permit		<input type="checkbox"/>		
<input type="checkbox"/>			4. Understudy entry into an enclosed space		<input type="checkbox"/>		

Competence: Maintain safe operations						Competence Demonstrated Training Officer (Sign/date)	
(Continue) Application of safe working practices on board							
Completi on of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completi on of Task	<u>Training Officer</u>	
	Sign	Date		<i>Operations, maintenance and repairs are planned and performed in accordance with safety rules and procedures</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			5. Demonstrate the procedures to enter an enclosed space		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate the procedures for the use of gas analysis instruments to be used prior to entering Fuel oil tanks		<input type="checkbox"/>		
<input type="checkbox"/>			7. Demonstrate the procedures for the use of gas analysis instruments to be used prior to entering Void spaces		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate the procedures for the use of gas analysis instruments to be used prior to entering Ballast tanks		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of the procedure adopted on finding someone overcome as a result of electric shock		<input type="checkbox"/>		
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of the procedure adopted on finding someone overcome as a result of gassing incident in an enclosed space		<input type="checkbox"/>		
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of dry-docking special safety precautions		<input type="checkbox"/>		
<input type="checkbox"/>			12. Understudy safe working practices for use of welding and cutting equipment		<input type="checkbox"/>		

SECTION 6 INFORMATION ON TRAINING TASKS AND COMPETENCES TO BE ACHIEVED

This section of the Training Record Book provides details of the training tasks that cadets should follow to make best use of the training opportunity to gain their time at sea. Each page lists the tasks or duties that cadets should undertake. Completion of these will lead to providing evidence towards meeting requirements of the relevant competencies.

A senior officer/ designated onboard training officer should review cadet progress to evaluate if a cadet's performance demonstrates that competence in that element is considered sufficient to meet the assessment requirements, and initial and date twice upon tasks' completion. The officer may provide guidance and/or recommendations for improvement if necessary. The competences required for certification as a watchkeeping officer as tabulated in the STCW Code, and other guidelines on best practice issued by industry associations, major shipping companies and flag States additional to the requirements of the STCW Convention, 1978, as amended are listed below:

COMPETENCES FOR OFFICERS IN CHARGE OF AN ENGINEERING WATCH (STCW Code Table A-III/1)

<p>Marine engineering at the operational level</p> <ol style="list-style-type: none">1. Maintain a safe engineering watch2. Use English in written and oral form3. Use internal communication systems4. Operate main and auxiliary machinery and associated control systems5. Operate fuel, lubrication, ballast and other pumping systems and associated control systems <p>Electrical, electronic and control engineering at the operational level</p> <ol style="list-style-type: none">6. Operate electrical, electronic and control systems7. Maintenance and repair of electrical and electronic equipment	<p>Maintenance and repair at the operational level</p> <ol style="list-style-type: none">8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board9. Maintenance and repair of shipboard machinery and equipment <p>Controlling the operation of the ship and care for persons on board at the operational level</p> <ol style="list-style-type: none">10. Application of leadership and teamworking skills11. Ensure compliance with pollution prevention requirements12. Maintain seaworthiness of the ship13. Prevent, control and fight fires on board14. Operate life-saving appliances15. Apply medical first aid on board ship16. Monitor compliance with legislative requirements
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EXAMPLE OF HOW TO COMPLETE THE LIST OF TRAINING TASKS AND COMPETENCES ACHIEVED

Competence: 1. Maintain a safe engineering watch							Competence Demonstrated	
1.2 – Conducting the watch							AMB	2/9/19
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Frequency and monitoring machinery. Equipment and systems conform to manufacturers' recommendations and accepted principles and procedures and are sufficient to deal with common operational errors and fault conditions.</i> <i>Questionable decisions and/or actions result in appropriate response and challenge</i>		Sign	Date	
				Improvement Recommendation				
<input checked="" type="checkbox"/>	AMB	2/9/19	1. Assisting an engineer officer on Seagoing watch duties	Extra practice in determining appropriate reactions	<input checked="" type="checkbox"/>	AMB	2/9/19	
<input checked="" type="checkbox"/>	AMB	3/9/19	2. Assisting an engineer officer on Port watch duties		<input checked="" type="checkbox"/>	AMB	3/9/19	
<input checked="" type="checkbox"/>	AMB	4/9/19	3. Assisting an engineer officer on Anchor watch duties		<input checked="" type="checkbox"/>	AMB	4/9/19	

- The competences are taken directly from the STCW Code. Extra competences have been added as per industry guidelines issued by several industry associations, best practices by major shipping companies and flag States requirements additional to the STCW Convention. By the end of the period of seagoing service the cadet should as have gained adequate knowledge, understanding and proficiency in the relevant competences.

- The primary tasks are sub-divided into training tasks or duties. The cadet should complete as many of these training tasks as possible. It should be noted that some of the skills and knowledge that underpin the competences may well have been obtained during shore-based training.
- Space is provided to record completion of each training task twice by the supervising officer. This does not mean that each task must be completed twice if, in the opinion of the officer, once is considered sufficient.
- The officer supervising the cadet does not necessarily have to be the designated training officer.
- Before Competence demonstrated is recorded the Chief Engineer or Designated Onboard Training Officer may record any appropriate recommendations about areas for improvement. A large blank space for this purpose is provided beneath the assessment requirements. As competence in this primary task is demonstrated, the appropriate box should be signed and dated by the Chief Engineer or Designated Training Officer on Board the ship to attest that competence has been demonstrated.
- A cadet's attainment of the competence should only be recorded as "Competence demonstrated" when the Chief Engineer or designated training officer is satisfied that the cadet can perform the duty without supervision or, where appropriate, that the cadet is able to supervise others in the performance of the duty.
- When recording competence demonstrated careful account should be taken of the assessment requirement contained in the table, as well as the best practices of seafarers and safe working practices.

SECTION 7 TASKS FOR OFFICER IN CHARGE OF AN ENGINEERING WATCH

The instruction in this portion of this record book includes the qualification criteria for the officers in charge of an engineering watch, read as follows:

Regulation III / I

Mandatory minimum requirements for certification of officers in charge of an engineering watch in a manned engine-room or designated duty engineers in a periodically unmanned engine-room.

1. Every officer in charge of an engineering watch in a manned engine-room or designated duty engineer officer in a periodically unmanned engine-room on a seagoing ship powered by main propulsion machinery of 750 kW propulsion power or more shall hold a certificate of competency.
2. Every candidate for certification shall:
 - 1) Be not less than 18 years of age;
 - 2) Have completed combined workshop skills training and an approved seagoing service of not less than 12 months as part of an approved training programme which includes onboard training that meets the requirements of section A-III/1 of the STCW Code and is documented in an approved training record book, or otherwise have completed combined workshop skills training and an approved seagoing service of not less than 36 months of which not less than 30 months shall be seagoing service in the engine department;
 - 3) Have performed, during the required seagoing service, engine-room watchkeeping duties under the supervision of the chief engineer officer or a qualified engineer officer for a period of not less than six months;
 - 4) Have completed approved education and training and meet the standard of competence specified in section A-III/1 of the STCW Code; and
 - 5) Meet the standard of competence specified in section A-VI/1, paragraph 2, section A-VI/2, paragraphs 1 to 4, section A-VI/3, paragraphs 1 to 4 and section A-VI/4, paragraphs 1 to 3 of the STCW Code.

TRAINING TASKS

Competence: 1. Maintain a safe engineering watch							Competence Demonstrated Training Officer (Sign/date)	
1.1 – Engineering watch: Relieve and Hand over								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		Carry out duties in accordance to accepted principles, procedures and ship specific instructions. Communication is clearly and unambiguously given and received		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of following the correct procedure for handing over a watch at sea		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of following the correct procedure for handing over a watch in port		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of following the correct procedures for taking over and accepting a watch at sea		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of following the correct procedures for taking over and accepting a watch in port		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of performing the engineering watch when vessel is at sea		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of preparing for the required engineering watch when vessel is in port		<input type="checkbox"/>			

Competence: 1. Maintain a safe engineering watch							Competence Demonstrated Training Officer (Sign/date)	
1.2 – Conducting the watch								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Frequency and monitoring machinery. Equipment and systems conform to manufacturers' recommendations and accepted principles and procedures and are sufficient to deal with common operational errors and fault conditions. Questionable decisions and/or actions result in appropriate response and challenge</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of assisting an engineer officer in seagoing watch-keeping duties		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of assisting an engineer officer in port watch-keeping duties		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of assisting an engineer officer in watch-keeping duties while at Anchor		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of carrying out all routine watch-keeping duties, checking the correct functioning of all automatic control and monitoring systems, under supervision		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of applying and making adjustments as necessary		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of performing routine checks in machinery spaces for correct water levels		<input type="checkbox"/>			

Competence: 1. Maintain a safe engineering watch							Competence Demonstrated Training Officer (Sign/date)	
1.2 – (Continue) Conducting the watch								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Frequency and monitoring machinery. Equipment and systems conform to manufacturers' recommendations and accepted principles and procedures and are sufficient to deal with common operational errors and fault conditions. Questionable decisions and/or actions result in appropriate response and challenge</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of main-engine scavenge drain blowdown process		<input type="checkbox"/>			
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of ensuring correct functioning of compressed air automatic drains		<input type="checkbox"/>			
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of checking sheathing on high-pressure fuel pipes		<input type="checkbox"/>			
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of cleaning air side of the turbo charger		<input type="checkbox"/>			
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of testing and corrective treatment of boiler water		<input type="checkbox"/>			
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of checking returns from heating coils and other possible sources for contaminated feed water		<input type="checkbox"/>			

Competence: 1. Maintain a safe engineering watch							Competence Demonstrated Training Officer (Sign/date)	
1.2 – (Continue) Conducting the watch								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Frequency and monitoring machinery. Equipment and systems conform to manufacturers' recommendations and accepted principles and procedures and are sufficient to deal with common operational errors and fault conditions. Questionable decisions and/or actions result in appropriate response and challenge</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			13. Demonstrate knowledge and understanding of checking correct boiler operation, including water level and burner unit		<input type="checkbox"/>			
<input type="checkbox"/>			14. Demonstrate knowledge and understanding of carrying out a soot-blowing procedure		<input type="checkbox"/>			
<input type="checkbox"/>			15. Demonstrate knowledge and understanding of checking all air receiver drains		<input type="checkbox"/>			
<input type="checkbox"/>			16. Demonstrate knowledge and understanding of assisting on the bridge during manoeuvring operations when entering port		<input type="checkbox"/>			
<input type="checkbox"/>			17. Demonstrate knowledge and understanding of assisting on the bridge during manoeuvring operations when leaving port		<input type="checkbox"/>			
<input type="checkbox"/>			18. Demonstrate knowledge and understanding that effective watchkeeping involves managing watch duties, including supervision, and maintaining the safe operation of propulsion plant and other machinery		<input type="checkbox"/>			

Competence: 1. Maintain a safe engineering watch						Competence Demonstrated Training Officer (Sign/date)	
1.2 – (Continue) Conducting the watch							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Frequency and monitoring machinery. Equipment and systems conform to manufacturers' recommendations and accepted principles and procedures and are sufficient to deal with common operational errors and fault conditions. Questionable decisions and/or actions result in appropriate response and challenge</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			19. Demonstrate knowledge and understanding of the factors related to operations, safety, security and environment protection that require immediate reporting to the watch-keeping duty engineer		<input type="checkbox"/>		
<input type="checkbox"/>			20. Demonstrate knowledge and understanding of the essential parameters that are required to be checked prior to starting: Generators, Pumps		<input type="checkbox"/>		
<input type="checkbox"/>			21. Demonstrate knowledge and understanding of the responsibilities of an engine cadet		<input type="checkbox"/>		
<input type="checkbox"/>			22. Demonstrate knowledge and understanding of the color coding of piping system on board		<input type="checkbox"/>		
<input type="checkbox"/>			23. Demonstrate knowledge and understanding of the essential information required when replacing a valve – Explain with reasons		<input type="checkbox"/>		
<input type="checkbox"/>			24. Demonstrate knowledge and understanding of interpreting typical schematic system diagrams from the manual for: Fresh water, Sea water, Bilge, Ballast, Heavy fuel oil for main and auxiliary, Fuel transfer, Steam, Firefighting, Engine starting air and Compressed air		<input type="checkbox"/>		

Competence: 1. Maintain a safe engineering watch						Competence Demonstrated Training Officer (Sign/date)	
1.2 – (Continue) Conducting the watch							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Frequency and monitoring machinery. Equipment and systems conform to manufacturers' recommendations and accepted principles and procedures and are sufficient to deal with common operational errors and fault conditions. Questionable decisions and/or actions result in appropriate response and challenge</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			25. Demonstrate knowledge and understanding of the design features, functional purpose, and limitations of the following items in a piping system on board: Butterfly valve, Globe valve, Gate valve, Needle valve, Valve actuators, Cocks, Expansion arrangement, Watertight bulkhead fittings, Pressure reducing valve, Relief valve, Quick closing valve, Steam traps, Thermostatic traps, Vacuum trap, Strainers and Filters		<input type="checkbox"/>		
<input type="checkbox"/>			26. Demonstrate knowledge, understanding and awareness of running machinery and normal operating sounds to identify potential malfunctions in advance		<input type="checkbox"/>		
<input type="checkbox"/>			27. Demonstrate knowledge and understanding of reading and comprehension of Company and Chief Engineer's Standing Orders		<input type="checkbox"/>		

Competence: 1. Maintain a safe engineering watch							Competence Demonstrated Training Officer (Sign/date)	
1.3 - Respond to black-out and emergency situations								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Effective leadership behaviors are demonstrated. Immediate actions are executed in accordance with laid down procedures, and due regard paid to the actual situation.</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of corrective action to be taken during Emergency fire drill		<input type="checkbox"/>			
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of corrective action to be taken during Emergency abandon ship drill		<input type="checkbox"/>			
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of corrective action to be taken during Emergency black-out drill		<input type="checkbox"/>			
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of /Assist with use of main engine local control and emergency manoeuvring		<input type="checkbox"/>			
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of/Assist with procedure for returning main engine to normal running		<input type="checkbox"/>			
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of manoeuvring procedures and emergency running in a drill		<input type="checkbox"/>			
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of emergency steering gear operation		<input type="checkbox"/>			

Competence: 1. Maintain a safe engineering watch							Competence Demonstrated Training Officer (Sign/date)	
1.3 – (Continue) Respond to black-out and emergency cases								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Effective leadership behaviors are demonstrated. Immediate actions are executed in accordance with laid down procedures, and due regard paid to the actual situation.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			13. Demonstrate knowledge and understanding of how to restart plant and how to reset machinery following failure		<input type="checkbox"/>			
<input type="checkbox"/>			14. Demonstrate knowledge and understanding of the priorities for restoring services		<input type="checkbox"/>			
<input type="checkbox"/>			15. Demonstrate knowledge and understanding of first-start arrangements		<input type="checkbox"/>			
<input type="checkbox"/>			16. Demonstrate knowledge and understanding of manually connecting/disconnecting emergency diesel generator to/from emergency switchboard		<input type="checkbox"/>			

Competence: 1. Maintain a safe engineering watch						Competence Demonstrated Training Officer (Sign/date)	
1.4 - Change-over of local control systems and remote-automatic							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The operations are conducted effectively and in accordance with procedures stated. Questionable decisions and/or actions result/in appropriate response and challenge</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge of changing over to the stand-by system for main engines		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge of changing over to the stand-by system for main engine system pumps		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge of changing over to the stand-by system for generators		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge of changing over to the stand-by system for steering gear		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge of preparing for stand-by engines		<input type="checkbox"/>		

Competence: 1. Maintain a safe engineering watch						Competence Demonstrated Training Officer (Sign/date)	
1.5 - Completing the Engine room logbook and other records							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Properly recorded all significant readings, movements and activities related to the engineering systems.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of completing the engine room log-book and record books		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of recording the complete engine movements in the log during periods of manoeuvring		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding for evaluation of entries in the Alarm Record Book		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of observing and noting performance and condition of machinery using condition monitoring equipment		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of observing and noting normal operating pressures temperatures		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of the purpose of the Alarm Record Book		<input type="checkbox"/>		
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of the correct procedures to be followed in case incorrect entries have been made in the official record book		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of all the operations which are required to be entered in the engine room logbook		<input type="checkbox"/>		

Competence: 1. Maintain a safe engineering watch							Competence Demonstrated Training Officer (Sign/date)	
1.6 - Acknowledge engine room resource management principles								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>To perform necessary tasks, resources are allocated and assigned as needed in correct priority.</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of setting realistic plans for allocation and use of engine-room resources		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of timely planning of tasks to achieve intended outcomes		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of specifying plans with sufficient detail to achieve the objective or goal be		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the assessment of tasks' progress by collection and interpretation of management data		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of leading progress reviews along with other team members, to ensure the task is attainable within the set plan		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of leading a task review upon completion, giving credit where due, and noting areas where things may be done differently on other occasion		<input type="checkbox"/>			

Competence: 2. Use English in written and oral form						Competence Demonstrated Training Officer (Sign/date)	
2.1 - Using English engineering publications, fault finding instructions and operational manuals							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Publications and manuals relevant to engineering tasks shall be clearly interpreted</i>		Sign	Date
			Improvement Recommendation				
<input type="checkbox"/>			1. Outline English language publications or manuals used: - - - - -		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of assisting, where appropriate, in completing the vessel's Planned Maintenance System records in English		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge, understanding and familiarity with manufacturers' service and technical reports		<input type="checkbox"/>		

Competence: 2. Use English in written and oral form							Competence Demonstrated Training Officer (Sign/date)	
2.2 – Use English Language to communicate with others, as appropriate								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Perform clear and understood communications</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of correct usage of engine room terminology, and names of machinery, equipment, and tools		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of giving and taking orders relating to routine operations in English		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of giving and taking orders relating to emergency drills in English		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of ensuring that orders have been understood correctly by others		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of the ability to communicate instructions effectively in the English language with a multi-lingual crew		<input type="checkbox"/>			

Competence: 3. Use internal communication systems						Competence Demonstrated Training Officer (Sign/date)	
3.1 - Operations of all on board internal communication systems							
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>Communication records are complete, accurate and comply with statutory requirements. Transmission and reception of messages are consistently successful.</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of the operation of the vessel's internal phone system		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of send and receiving Information or instructions using the Internal message system		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of that communication is a two-way exchange, demonstrate communication between steering-gear room and engine-room		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of that communication is a two-way exchange, demonstrate communication between steering-gear room and the Bridge		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of the correct station ID procedure when using handheld transceivers (portable radios)		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of the importance of completing records of information received by telephone or hand-held transceivers (portable radios) accurately in a timely manner		<input type="checkbox"/>		

Competence: 4. Operate main and auxiliary machinery and associated control systems								Competence Demonstrated Training Officer (Sign/date)	
4.1 - Prepare machinery for port departure									
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer			
	Sign	Date		<i>Recording all relevant checks and actions. All checks and actions are carried out in accordance with laid down instructions and all auxiliary and control systems are functioning properly.</i>		Sign	Date		
				Improvement Recommendation					
<input type="checkbox"/>			1. Draw a schematic arrangement of the main engine system, indicating the main components using block diagrams		<input type="checkbox"/>				
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of preparing and testing the telegraphs and steering gear		<input type="checkbox"/>				
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of confirming Bridge and Engine Room communications		<input type="checkbox"/>				
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of checking starting air compressors and preparing the starting air system		<input type="checkbox"/>				
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of the preparation of main and auxiliary machinery for departure from port		<input type="checkbox"/>				
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of the preparation of main and auxiliary machinery for the sea passage		<input type="checkbox"/>				
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of the use of high level and low-level sea suctions		<input type="checkbox"/>				

Competence: 4. Operate main and auxiliary machinery and associated control systems						Competence Demonstrated Training Officer (Sign/date)	
4.2 – Main and auxiliary machinery operating							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Operating the machinery in accordance with instructions, procedures, and safe working practices. All instruments are monitored, necessary adjustments made and required actions carried out and recorded properly</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. In diagrammatic form, sketch the main systems as appropriate for the vessel's auxiliary engine		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the basic steps in a "Cycle" and illustrate how suction and exhaustion are achieved in a 2-Stroke and a 4-Stroke diesel engine		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of identifying the stresses that act on the cylinder liner during engine operation		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the design features of a modern 2-stroke engine cylinder liner		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of how the cylinder liners are lubricated in 2- stroke cycle diesel engine		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of how the cylinder liners are lubricated in 4-stroke cycle diesel engine		<input type="checkbox"/>		
<input type="checkbox"/>			7. With the aid of generator and main engine manuals and spare components, describe the design features and functional purpose of the cylinder heads and all its fittings		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of identifying the stresses that a piston is subjected to and features to withstand the stresses		<input type="checkbox"/>		

Competence: 4. Operate main and auxiliary machinery and associated control systems							Competence Demonstrated Training Officer (Sign/date)	
4.2 – (Continue) Main and auxiliary machinery operating								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Operating the machinery in accordance with instructions, procedures, and safe working practices. All instruments are monitored, necessary adjustments made and required actions carried out and recorded properly</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of the design features of a modern 2-stroke engine piston		<input type="checkbox"/>			
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of the functional purpose of the main propulsion engine's turbocharger		<input type="checkbox"/>			
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of identifying the main components of the turbocharger and explain their functional purpose		<input type="checkbox"/>			
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of how the crankshaft of a modern marine engine is supported		<input type="checkbox"/>			
<input type="checkbox"/>			13. Demonstrate knowledge and understanding of the parameters that require to be checked immediately upon starting of the propulsion plant		<input type="checkbox"/>			
<input type="checkbox"/>			14. Demonstrate knowledge and understanding of the safety protection devices, alarms and cut outs, fitted on a main engine and a diesel generator		<input type="checkbox"/>			
<input type="checkbox"/>			15. In diagrammatic form, sketch the main systems as appropriate for the vessel's boiler system		<input type="checkbox"/>			
<input type="checkbox"/>			16. Demonstrate knowledge and understanding of why steam is the most commonly used heat conveying medium on board ship		<input type="checkbox"/>			

Competence: 4. Operate main and auxiliary machinery and associated control systems							Competence Demonstrated Training Officer (Sign/date)	
4.2 – (Continue) Main and auxiliary machinery operating								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Operating the machinery in accordance with instructions, procedures, and safe working practices. All instruments are monitored, necessary adjustments made and required actions carried out and recorded properly</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			17. Demonstrate knowledge and understanding of the potential hazards of a typical steam plant		<input type="checkbox"/>			
<input type="checkbox"/>			18. Demonstrate knowledge and understanding of the following boiler fittings in the manual and boiler on board and state their functional purpose: - Main steam stop valve		<input type="checkbox"/>			
<input type="checkbox"/>			19. - Auxiliary steam stop valve		<input type="checkbox"/>			
<input type="checkbox"/>			20. - Safety valves and easing gears		<input type="checkbox"/>			
<input type="checkbox"/>			21. - Water level gauge		<input type="checkbox"/>			
<input type="checkbox"/>			22. - Feed inlet line		<input type="checkbox"/>			
<input type="checkbox"/>			23. - Blow down valves		<input type="checkbox"/>			
<input type="checkbox"/>			24. - Scum valves		<input type="checkbox"/>			

Competence: 4. Operate main and auxiliary machinery and associated control systems							Competence Demonstrated Training Officer (Sign/date)	
4.2 – (Continue) Main and auxiliary machinery operating								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Operating the machinery in accordance with instructions, procedures, and safe working practices. All instruments are monitored, necessary adjustments made and required actions carried out and recorded properly</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			25. - Soot blowers		<input type="checkbox"/>			
<input type="checkbox"/>			26. - Connection for pressure gauge		<input type="checkbox"/>			
<input type="checkbox"/>			27. - Air release valve		<input type="checkbox"/>			
<input type="checkbox"/>			28. - Boiler water sampling valve		<input type="checkbox"/>			
<input type="checkbox"/>			29. Demonstrate knowledge and understanding of the need to generate steam at a higher-pressure range e.g., 60 bar		<input type="checkbox"/>			
<input type="checkbox"/>			30. Show, with the aid of a system diagram, how the waste heat from the main engine exhaust is recovered		<input type="checkbox"/>			
<input type="checkbox"/>			31. Demonstrate knowledge and understanding of the type of boiler fitted onboard, illustrate the water circulation flow and the gas path		<input type="checkbox"/>			
<input type="checkbox"/>			32. Demonstrate knowledge and understanding of the type of gauge glass fitted the type of boiler onboard, identify the design features		<input type="checkbox"/>			

Competence: 4. Operate main and auxiliary machinery and associated control systems							Competence Demonstrated Training Officer (Sign/date)	
4.2 – (Continue) Main and auxiliary machinery operating								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Operating the machinery in accordance with instructions, procedures, and safe working practices. All instruments are monitored, necessary adjustments made and required actions carried out and recorded properly</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			33. Demonstrate knowledge and understanding of the safety features and protective devices fitted on a boiler		<input type="checkbox"/>			
<input type="checkbox"/>			34. Demonstrate knowledge and understanding of starting the main engine from local- and remote-control positions		<input type="checkbox"/>			
<input type="checkbox"/>			35. Demonstrate knowledge and understanding of carrying out post start-up checks of main engine and shafting		<input type="checkbox"/>			
<input type="checkbox"/>			36. Demonstrate knowledge and understanding of operating main compressor manually and changing over to normal automatic running mode		<input type="checkbox"/>			
<input type="checkbox"/>			37. Demonstrate knowledge and understanding of recording normal running pressures and temperatures, and noting system valve settings and positions in normal running mode		<input type="checkbox"/>			
<input type="checkbox"/>			38. Demonstrate knowledge and understanding of responding to instructions from the bridge and operating the main engine controls during periods of manoeuvring		<input type="checkbox"/>			
<input type="checkbox"/>			39. Demonstrate knowledge and understanding of waterwashing exhaust-side of the main engine turbochargers		<input type="checkbox"/>			
<input type="checkbox"/>			40. Demonstrate knowledge and understanding of changing over local/manual control of machinery and systems to remote/automatic control, as appropriate		<input type="checkbox"/>			
Competence: 4. Operate main and auxiliary machinery and associated control systems							Competence Demonstrated Training Officer (Sign/date)	

4.2 – (Continue) Main and auxiliary machinery operating

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Operating the machinery in accordance with instructions, procedures, and safe working practices. All instruments are monitored, necessary adjustments made and required actions carried out and recorded properly</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			41. Demonstrate knowledge and understanding of adjustments to main engine and auxiliary machinery for continuous running,		<input type="checkbox"/>		
<input type="checkbox"/>			42. Demonstrate knowledge and understanding of reporting and recording abnormal conditions, and noting corrective actions required		<input type="checkbox"/>		
<input type="checkbox"/>			43. Demonstrate knowledge and understanding of the preparation for running and operation of freshwater generators/evaporators		<input type="checkbox"/>		
<input type="checkbox"/>			44. Demonstrate knowledge and understanding of testing and conditioning for portability and purity of fresh water		<input type="checkbox"/>		
<input type="checkbox"/>			45. Demonstrate knowledge and understanding of checking crankcase oil-mist detector and action required in case of an alarm		<input type="checkbox"/>		
<input type="checkbox"/>			46. Demonstrate knowledge and understanding of checking engine governors		<input type="checkbox"/>		
<input type="checkbox"/>			47. Demonstrate knowledge and understanding of taking engine power diagrams to calculate mean effective pressure and indicated power		<input type="checkbox"/>		
<input type="checkbox"/>			48. Demonstrate knowledge and understanding of routine testing of engine cooling water		<input type="checkbox"/>		
Competence: 4. Operate main and auxiliary machinery and associated control systems						Competence Demonstrated Training Officer (Sign/date)	

4.2 – (Continue) Main and auxiliary machinery operating							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Operating the machinery in accordance with instructions, procedures, and safe working practices. All instruments are monitored, necessary adjustments made and required actions carried out and recorded properly</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			49. Demonstrate knowledge and understanding of routine testing of Fuel oil		<input type="checkbox"/>		
<input type="checkbox"/>			50. Demonstrate knowledge and understanding of routine testing of Lubricating oil		<input type="checkbox"/>		
<input type="checkbox"/>			51. Demonstrate knowledge and understanding of, shutting down main engine and auxiliary systems after finishing with engines		<input type="checkbox"/>		
<input type="checkbox"/>			52. Demonstrate knowledge and understanding of filling up a boiler and raising steam from cold		<input type="checkbox"/>		
<input type="checkbox"/>			53. Demonstrate knowledge and understanding of raising the temperature of main engine fuel oil from cold to the correct level		<input type="checkbox"/>		
<input type="checkbox"/>			54. Demonstrate knowledge and understanding of admitting steam to a line or system, taking all precautions against thermal and pressure shock and avoiding water hammer		<input type="checkbox"/>		
<input type="checkbox"/>			55. Demonstrate knowledge and understanding of checking the security of steam pipes and any expansion pieces		<input type="checkbox"/>		
<input type="checkbox"/>			56. Demonstrate knowledge and understanding of checking the functioning of steam traps and drains		<input type="checkbox"/>		
Competence: 4. Operate main and auxiliary machinery and associated control systems						Competence Demonstrated Training Officer (Sign/date)	
4.2 – (Continue) Main and auxiliary machinery operating							

Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Operating the machinery in accordance with instructions, procedures, and safe working practices. All instruments are monitored, necessary adjustments made and required actions carried out and recorded properly</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			57. Demonstrate knowledge and understanding of closing steam lines, while observing procedures for draining		<input type="checkbox"/>		
<input type="checkbox"/>			58. Demonstrate knowledge and understanding of checking the quality of combustion, and noting: <ul style="list-style-type: none"> - Smoke from the funnel - Clarity around the flame - Flame color, shape, and size - Excess air, CO, /CO reading - Deposits of carbon and unburnt fuel 		<input type="checkbox"/>		
<input type="checkbox"/>			59. Demonstrate knowledge and understanding of checking the returns from heating coils and other possible sources of contaminated feedwater		<input type="checkbox"/>		
<input type="checkbox"/>			60. Demonstrate knowledge and understanding of correct functioning of all boiler conditions, indicators, and alarms		<input type="checkbox"/>		
<input type="checkbox"/>			61. Demonstrate knowledge and understanding of checking that correct boiler water level is maintained		<input type="checkbox"/>		
<input type="checkbox"/>			62. Demonstrate knowledge and understanding of the correct procedure for blowing down a boiler gauge-glass		<input type="checkbox"/>		
<input type="checkbox"/>			63. Demonstrate knowledge and understanding of the effect of varying temperature of circulating water		<input type="checkbox"/>		
Competence: 4. Operate main and auxiliary machinery and associated control systems						Competence Demonstrated Training Officer (Sign/date)	

4.2 – (Continue) Main and auxiliary machinery operating

Completi on of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completi on of Task	<u>Training Officer</u>	
	Sign	Date		<i>Operating the machinery in accordance with instructions, procedures, and safe working practices. All instruments are monitored, necessary adjustments made and required actions carried out and recorded properly</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			64. Demonstrate knowledge and understanding of starting-up and operating the refrigeration plant of the vessel		<input type="checkbox"/>		
<input type="checkbox"/>			65. If appropriate, make up brine		<input type="checkbox"/>		
<input type="checkbox"/>			66. Check brine density		<input type="checkbox"/>		
<input type="checkbox"/>			67. Demonstrate knowledge and understanding of shutting down and securing Refrigeration/Air Conditioning plant		<input type="checkbox"/>		
<input type="checkbox"/>			68. Demonstrate knowledge and understanding of carrying out a refrigerant charging procedure		<input type="checkbox"/>		
<input type="checkbox"/>			69. Demonstrate knowledge and understanding of carrying out leak detection for refrigerant gases		<input type="checkbox"/>		
<input type="checkbox"/>			70. Demonstrate knowledge and understanding of replenishing Driers and filters		<input type="checkbox"/>		
<input type="checkbox"/>			71. Demonstrate knowledge and understanding of checking safety devices of pressure tanks		<input type="checkbox"/>		

Competence: 4. Operate main and auxiliary machinery and associated control systems							Competence Demonstrated Training Officer (Sign/date)	
4.2 – (Continue) Main and auxiliary machinery operating								
Completi on of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completi on of Task	<u>Training Officer</u>		
	Sign	Date		<i>Operating the machinery in accordance with instructions, procedures, and safe working practices. All instruments are monitored, necessary adjustments made and required actions carried out and recorded properly</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			72. Demonstrate knowledge and understanding of putting a sewage system on-line and checking correct operation		<input type="checkbox"/>			
<input type="checkbox"/>			73. Demonstrate knowledge and understanding of operating waste handling equipment (Incinerator)		<input type="checkbox"/>			
<input type="checkbox"/>			74. Demonstrate knowledge and understanding of operating waste handling equipment (Compactor/Shredder/other)		<input type="checkbox"/>			
<input type="checkbox"/>			75. Demonstrate knowledge and understanding of the type of air compressors fitted onboard and their functional purpose		<input type="checkbox"/>			
<input type="checkbox"/>			76. Demonstrate knowledge and understanding of why the required starting air pressures are achieved by using multi-stage compression		<input type="checkbox"/>			
<input type="checkbox"/>			77. Demonstrate knowledge and understanding of the functional purpose of the air reservoir		<input type="checkbox"/>			
<input type="checkbox"/>			78. Demonstrate knowledge and understanding of the safety features and protective devices fitted on air compressors		<input type="checkbox"/>			
<input type="checkbox"/>			79. Demonstrate knowledge and understanding of the safe procedures of starting the air compressor		<input type="checkbox"/>			

Competence: 4. Operate main and auxiliary machinery and associated control systems							Competence Demonstrated Training Officer (Sign/date)	
4.2 – (Continue) Main and auxiliary machinery operating								
Completi on of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completi on of Task	<u>Training Officer</u>		
	Sign	Date		<i>Operating the machinery in accordance with instructions, procedures, and safe working practices. All instruments are monitored, necessary adjustments made and required actions carried out and recorded properly</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			80. Demonstrate knowledge and understanding of, a typical hydraulic system on board, and with the aid of drawings, identify the major components and describe their functional purpose		<input type="checkbox"/>			
<input type="checkbox"/>			81. Demonstrate knowledge and understanding of the operating principle and functional purpose of hydraulic actuator		<input type="checkbox"/>			
<input type="checkbox"/>			82. Demonstrate knowledge and understanding of the operating principle and functional purpose of hydraulic motor (Gear, Vane and Piston type motor)		<input type="checkbox"/>			
<input type="checkbox"/>			83. Demonstrate knowledge and understanding of the operating principle and functional purpose of an accumulator		<input type="checkbox"/>			
<input type="checkbox"/>			84. Demonstrate knowledge and understanding of the operating principle and functional purpose of a pressure booster		<input type="checkbox"/>			
<input type="checkbox"/>			85. Demonstrate knowledge and understanding of the operating principle and functional purpose of shock absorber		<input type="checkbox"/>			
<input type="checkbox"/>			86. Demonstrate knowledge and understanding of the operating principle and functional purpose of air and vacuum chamber		<input type="checkbox"/>			
<input type="checkbox"/>			87. Demonstrate knowledge and understanding of how contamination will deteriorate lubricant quality while in storage		<input type="checkbox"/>			

Competence: 4. Operate main and auxiliary machinery and associated control systems						Competence Demonstrated Training Officer (Sign/date)	
4.2 – (Continue) Main and auxiliary machinery operating							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Operating the machinery in accordance with instructions, procedures, and safe working practices. All instruments are monitored, necessary adjustments made and required actions carried out and recorded properly</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			88. Demonstrate knowledge and understanding of how lubricants exposed to high temperatures will deteriorate in storage		<input type="checkbox"/>		
<input type="checkbox"/>			89. Demonstrate knowledge and understanding of how lubricants exposed to low temperatures will deteriorate in storage		<input type="checkbox"/>		
<input type="checkbox"/>			90. Demonstrate knowledge and understanding of how contamination by sea water will deteriorate the quality of lubricants while in storage		<input type="checkbox"/>		
<input type="checkbox"/>			91. Demonstrate knowledge and understanding of the functional purpose of "Heat Exchangers"		<input type="checkbox"/>		
<input type="checkbox"/>			92. Demonstrate knowledge and understanding of working pressure and test pressure for each type of heat exchanger on board		<input type="checkbox"/>		
<input type="checkbox"/>			93. Demonstrate knowledge and understanding of the correct procedure during the change-over between heaters		<input type="checkbox"/>		
<input type="checkbox"/>			94. Demonstrate knowledge and understanding of how the heat transfer surface area affects the rate of heat transfer		<input type="checkbox"/>		
<input type="checkbox"/>			95. Demonstrate knowledge and understanding of how the type of flow (Laminar / Turbulent) affects the rate of heat transfer		<input type="checkbox"/>		

Competence: 4. Operate main and auxiliary machinery and associated control systems						Competence Demonstrated Training Officer (Sign/date)	
4.2 – (Continue) Main and auxiliary machinery operating							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Operating the machinery in accordance with instructions, procedures, and safe working practices. All instruments are monitored, necessary adjustments made and required actions carried out and recorded properly</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			96. Demonstrate knowledge and understanding of how the temperature difference between two media affects the rate of heat transfer		<input type="checkbox"/>		
<input type="checkbox"/>			97. Demonstrate knowledge and understanding of the difference in design features between the tube-type and the plate-type heat exchanger		<input type="checkbox"/>		
<input type="checkbox"/>			98. Demonstrate knowledge and understanding of Inert Gas Systems (IGS), and identify, with the aid of a block diagram, all components on the IGS and how the required inert gas qualities can be achieved		<input type="checkbox"/>		
<input type="checkbox"/>			99. Demonstrate knowledge and understanding of the safety and protection devices fitted on Inert Gas Systems		<input type="checkbox"/>		
<input type="checkbox"/>			100. Demonstrate knowledge and understanding of the presence of static charges inside a cargo tank during loading and unloading operations and how inert gas may prevent explosions		<input type="checkbox"/>		
<input type="checkbox"/>			101. Demonstrate knowledge and understanding of the physical and chemical characteristics of "Inert gas", suitable for typical cargo operation on board a VLCC		<input type="checkbox"/>		
<input type="checkbox"/>			102. Demonstrate knowledge and understanding of the practical approach to reducing the risk of explosions on board tankers		<input type="checkbox"/>		

Competence: 5. Operate fuel, lubrication, ballast and other pumping systems and associated control systems						Competence Demonstrated Training Officer (Sign/date)	
5.1 – Planning the operations of auxiliary and piping systems, and service plants							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Operations are planned and all equipment and control systems checked before executing operations</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Sketch a line diagram of the oily water separator (OWS) system		<input type="checkbox"/>		
<input type="checkbox"/>			2. Sketch a line diagram of the ballast water system		<input type="checkbox"/>		
<input type="checkbox"/>			3. Sketch a line diagram of the engine-room bilge-water system		<input type="checkbox"/>		
<input type="checkbox"/>			4. Sketch a line diagram of the hold bilge-water system		<input type="checkbox"/>		
<input type="checkbox"/>			5. Assist in the operation of the oily water separator (OWS)		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of making correct entries in the Oil Record Book		<input type="checkbox"/>		
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of ballast water management operations planning		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of planning and lining-up a ballast water pump		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of planning and lining-up a bilge pump		<input type="checkbox"/>		

Competence: 5. Operate fuel, lubrication, ballast and other pumping systems and associated control systems							Competence Demonstrated Training Officer (Sign/date)	
5.1 – (Continue) Planning the operations of auxiliary and piping systems, and service plants								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Operations are planned and all equipment and control systems checked before executing operations</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of bilge pumps		<input type="checkbox"/>			
<input type="checkbox"/>			11. Sketch a line diagram of the fuel oil bunkering system		<input type="checkbox"/>			
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of assisting in planning to receive bunkers on board		<input type="checkbox"/>			
<input type="checkbox"/>			13. Demonstrate knowledge and understanding of assisting in planning for transfer of fuel from bunker tanks to service tanks		<input type="checkbox"/>			
<input type="checkbox"/>			14. Demonstrate knowledge and understanding of the working principle of the centrifuge fitted onboard		<input type="checkbox"/>			
<input type="checkbox"/>			15. With the aid of diagrams and the Original Equipment Manufacturers' manual, demonstrate knowledge and understanding of the difference between a purifier and a clarifier		<input type="checkbox"/>			
<input type="checkbox"/>			16. Demonstrate knowledge and understanding of the major components of a purifier		<input type="checkbox"/>			
<input type="checkbox"/>			17. Demonstrate knowledge and understanding of the safety features and protective devices fitted on a purifier		<input type="checkbox"/>			

Competence: 5. Operate fuel, lubrication, ballast and other pumping systems and associated control systems						Competence Demonstrated Training Officer (Sign/date)	
5.1 – (Continue) Planning the operations of auxiliary and piping systems, and service plants							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Operations are planned and all equipment and control systems checked before executing operations</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			18. Demonstrate knowledge and understanding of the operating principle of a centrifugal pump and the advantages and disadvantages of this type of pump		<input type="checkbox"/>		
<input type="checkbox"/>			19. Demonstrate knowledge and understanding of the operating principle of a screw / gear pump and the advantages and disadvantages of this type of pump		<input type="checkbox"/>		
<input type="checkbox"/>			20. Demonstrate knowledge and understanding of the application of centrifugal pumps and screw / gear pumps onboard		<input type="checkbox"/>		
<input type="checkbox"/>			21. Demonstrate knowledge and understanding of why, the casing of a centrifugal pump on board needs to be filled with water prior to starting		<input type="checkbox"/>		
<input type="checkbox"/>			22. Demonstrate knowledge and understanding of why relief valves are fitted on gear / screw pumps, and the location of the relief valve		<input type="checkbox"/>		
<input type="checkbox"/>			23. Demonstrate knowledge and understanding of the parameters to be checked before and after starting of a centrifugal sea water pump		<input type="checkbox"/>		
<input type="checkbox"/>			24. Demonstrate knowledge and understanding of the safe procedure for starting a Gear or Screw Type Pump (example, Lubricating Oil or Fuel Oil System)		<input type="checkbox"/>		

Competence: 5. Operate fuel, lubrication, ballast and other pumping systems and associated control systems							Competence Demonstrated Training Officer (Sign/date)	
5.2 – Operating the systems for fuel oil, lube oil, bilge, ballast, cargo pumping, and MARPOL equipment								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Carried out the operations in accordance with rules and procedures to ensure safety of operations and avoid pollution of the marine environment</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of the procedure to transfer fuel from bunker tanks to service tanks, observing all safety, vessel stability and pollution prevention requirements, under supervision		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the procedure to drain water/sludge from settling tanks		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of the procedure to start, operate and monitor Fuel oil purifiers		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of Sulphur Emissions Control Areas		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of assisting an officer with change over from heavy fuel oil to low viscosity fuel oil and vice versa		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of the procedure to start, operate and monitor Lube oil purifiers		<input type="checkbox"/>			
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of maintaining lube oil system tanks at the correct levels by performing routine checks and top ups		<input type="checkbox"/>			
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of the procedure for loading and discharging cargo tanks, including stripping procedures		<input type="checkbox"/>			

<input type="checkbox"/>			9. Demonstrate knowledge and understanding of setting up and using oily water separators (OWS) in compliance with MARPOL	<input type="checkbox"/>		
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Competence: 5. Operate fuel, lubrication, ballast and other pumping systems and associated control systems	Competence Demonstrated Training Officer (Sign/date)
5.2 – (Continue) Operating the systems for fuel oil, lube oil, bilge, ballast, cargo pumping, and MARPOL equipment	

Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>Carried out the operations in accordance with rules and procedures to ensure safety of operations and avoid pollution of the marine environment</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of, operating an oil discharge monitor in compliance with MARPOL (oil tankers)		<input type="checkbox"/>		
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of using bilge holding tanks		<input type="checkbox"/>		
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of the observation of all requirements for pollution prevention		<input type="checkbox"/>		
<input type="checkbox"/>			13. Demonstrate knowledge and understanding of opening up, cleaning and reassembling an oily water separator (OWS)		<input type="checkbox"/>		
<input type="checkbox"/>			14. Demonstrate knowledge and understanding of ballasting observing all safety, vessel stability and pollution prevention requirements while assisting an officer		<input type="checkbox"/>		
<input type="checkbox"/>			15. Demonstrate knowledge and understanding of de-ballasting, observing all safety, vessel stability and pollution prevention requirements while assisting an officer		<input type="checkbox"/>		
<input type="checkbox"/>			16. Demonstrate knowledge and understanding of pumping out hold bilges, ensuring observation of all pollution prevention regulations and requirements		<input type="checkbox"/>		

<input type="checkbox"/>			17. Demonstrate knowledge and understanding of the emergency arrangements for emptying engine room bilges in the event of flooding		<input type="checkbox"/>		
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TRAINING TASKS

Competence: 6. Operate electrical, electronic and control systems							Competence Demonstrated Training Officer (Sign/date)	
6.1 – Operating principles of electrical equipment and its basic configuration: Locating and using relevant manuals, diagrams, drawings, and instructions for electrical equipment and distribution systems								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Quickly identified and effectively use of instructions and manuals relevant for safe and efficient operations. Electrical systems can be understood and explained with drawings/ instructions</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of the difference between a system diagram, a circuit diagram, and a wiring diagram		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the ability to use the vessel's wiring diagrams to identify: <ul style="list-style-type: none"> • Main circuit breakers • Emergency switchboard connections • Trips (over current, reverse power, low frequency) • Fuses • Transformers • Shore connections • Supply voltages • Types of motors and motor starters • Loads to each piece of equipment 		<input type="checkbox"/>			

Competence: 6. Operate electrical, electronic and control systems							Competence Demonstrated Training Officer (Sign/date)	
6.1 – (Continue) Operating principles of electrical equipment and its basic configuration: Locating and using relevant manuals, diagrams, drawings, and instructions for electrical equipment and distribution systems								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Quickly identified and effectively use of instructions and manuals relevant for safe and efficient operations. Electrical systems can be understood and explained with drawings/ instructions</i>		Sign	Date	
				Improvement Recommendation				
			1. Demonstrate knowledge and understanding of commonly used symbols on circuit diagrams					
<input type="checkbox"/>			2. Demonstrate knowledge, understanding and awareness of the location of major control and protection devices within the distribution network		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of electrical loads that are classed as essential or non-essential, and how essential services are supplied		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of locating the shore power connection and explain the procedures for connection and disconnection		<input type="checkbox"/>			

Competence: 6. Operate electrical, electronic and control systems						Competence Demonstrated Training Officer (Sign/date)	
6.2 – Prepare and start generators or alternators							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The operations are planned and conducted in accordance with operating manuals, established rules and procedures to ensure safety of operations</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of pre-start-up checks and testing electrical equipment and control systems		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of preparation for starting in remote and manual modes		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of carrying out checks post start-up		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of checking that all controls are functioning correctly		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of trip switches and how to reset for Over-current		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of trip switches and how to reset for Reverse-power		<input type="checkbox"/>		
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of trip switches and how to reset for Low frequency		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of checking exhaust pipes for leakage		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of checking efficiency of sheathing on high-pressure fuel pipes and associated leak-off indicators		<input type="checkbox"/>		

Competence: 6. Operate electrical, electronic and control systems							Competence Demonstrated Training Officer (Sign/date)	
6.3 – Parallel and change-over generators or alternators								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>The operations are planned and conducted in compliance with operating manuals, rules and procedures to ensure safety operations</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of paralleling procedures and loading, including emergency generators and shaft generators, after starting-up and running up to normal speed		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of adjusting the load sharing of generators running in parallel		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of shedding the load, stopping and shutting down a generator running in parallel		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the safety features in the power distribution system which protect alternators in case of a major fault		<input type="checkbox"/>			

Competence: 6. Operate electrical, electronic and control systems						Competence Demonstrated Training Officer (Sign/date)	
6.4 – Where appropriate, start electric motors including high voltage installations.							
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>The operations are planned and carried out in accordance with operating manuals, established rules and procedures to ensure safety of operations</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of the starting methods for electric motors		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of starting and operating a high-capacity pump		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of protective switch gear associated with high voltage installations		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the vessel's permit to work system concerning electrical equipment		<input type="checkbox"/>		

Competence: 6. Operate electrical, electronic and control systems							Competence Demonstrated Training Officer (Sign/date)	
6.5 – Operating principles of electronic equipment and its basic configuration: Basic electronic circuit elements characteristics								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Electronic systems can be understood and explained with drawings/instructions. The instructions and manuals relevant for safe and efficient operations are quickly identified and properly used.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Sketch and describe a component providing electronic equipment control		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of in routine checks and electronic equipment testing		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of electronic circuit symbols		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the characteristics of basic electronic circuit elements		<input type="checkbox"/>			

Competence: 6. Operate electrical, electronic and control systems							Competence Demonstrated Training Officer (Sign/date)	
6.6 – Automatic and control systems flow chart								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Electronic systems can be understood and explained with drawings/instructions. The instructions and manuals relevant for safe and efficient operations are quickly identified and properly used.</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of process signal symbols and terminology commonly used with control system diagrams		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding to sketch a part of the vessel's electrical distribution system that uses sequential control circuits		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of items of equipment that use sequential control circuits		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of flowcharts for automatic and control systems for electronic equipment operation		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of routine checks and tests on electronic equipment control systems		<input type="checkbox"/>			

Competence: 6. Operate electrical, electronic and control systems							Competence Demonstrated Training Officer (Sign/date)	
6.7 – Control systems for machinery: Function, Characteristics, and features								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Electronic systems can be understood and explained with drawings/instructions. The instructions and manuals relevant for safe and efficient operations are quickly identified and used properly.</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding to sketch and describe a system of electronic control		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the functions, features and characteristics of the main propulsion engine control system		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of the functions, features and characteristics of the steering gear control system		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the functions, features and characteristics of the steam boiler control system		<input type="checkbox"/>			

Competence: 6. Operate electrical, electronic and control systems							Competence Demonstrated Training Officer (Sign/date)	
6.8 – Operating principles of electrical and electronic control systems and its basic configuration: Automatic control methodologies and characteristics								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Electronic systems can be understood and explained with drawings/instructions. The instructions and manuals relevant for safe and efficient operations are quickly identified and properly used.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of the term 'high gain' in a control system		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of how instability in a control system can occur		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding to sketch a diagrammatic arrangement of an automatic control system you have worked on showing the control elements		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding to give examples of Proportional- Integral-Derivative (PID) controllers, that may be adjusted to achieve improved results/stability		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of tuning methods commonly used onboard		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of software applications used in PIO loop tuning		<input type="checkbox"/>			
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of the fundamental difference in control systems for ventilation, heating, and air conditioning systems		<input type="checkbox"/>			
<input type="checkbox"/>			8. Give an example of a system where 'droop' must be controlled		<input type="checkbox"/>			
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of PLC-based controller and their function, identifying pre-set, and adjustable parameters		<input type="checkbox"/>			

Competence: 6. Operate electrical, electronic and control systems						Competence Demonstrated Training Officer (Sign/date)	
6.9 – Proportional-Integral-Derivative (PID) control principles							
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>Electronic systems can be understood and explained with drawings/instructions. The instructions and manuals relevant for safe and efficient operations are quickly identified and properly used.</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of basic principle of three-term control		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of PID control characteristics and associated system devices for process control		<input type="checkbox"/>		

Competence: 7. Maintenance and repair of electrical and electronic equipment						Competence Demonstrated Training Officer (Sign/date)	
7.1 – Spot and Interpret electrical and simple electronic drawings							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Manuals and diagrams are quickly located and the most suitable are selected for the task to be performed</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Make a list of shipboard equipment for which relevant manuals/diagrams are used: <ul style="list-style-type: none"> • • • • • • • • 		<input type="checkbox"/>		

Competence: 7. Maintenance and repair of electrical and electronic equipment

Competence Demonstrated
Training Officer
(Sign/date)

7.2 – Knowledge of construction and operation of electrical testing and measuring equipment

Completion of Task	Training Officer		Operated shipboard plant or equipment	Used Measuring equipment and Testers	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date			<i>The selected testing equipment and measuring instruments are appropriate. Interpretation of results is checked for compliance with stated tolerances</i>		Sign	Date
<input type="checkbox"/>			1.	<input type="checkbox"/> Battery impedance <input type="checkbox"/> Di-electric test sets <input type="checkbox"/> Current clamp meters <input type="checkbox"/> High/low voltage detectors <input type="checkbox"/> Multimeters <input type="checkbox"/> Insulation testers		<input type="checkbox"/>		
<input type="checkbox"/>			2.	<input type="checkbox"/> Battery impedance <input type="checkbox"/> Di-electric test sets <input type="checkbox"/> Current clamp meters <input type="checkbox"/> High/low voltage detectors <input type="checkbox"/> Multimeters <input type="checkbox"/> Insulation testers		<input type="checkbox"/>		
<input type="checkbox"/>			3.	<input type="checkbox"/> Battery impedance <input type="checkbox"/> Di-electric test sets <input type="checkbox"/> Current clamp meters <input type="checkbox"/> High/low voltage detectors <input type="checkbox"/> Multimeters <input type="checkbox"/> Insulation testers		<input type="checkbox"/>		
<input type="checkbox"/>			4.	<input type="checkbox"/> Battery impedance <input type="checkbox"/> Di-electric test sets <input type="checkbox"/> Current clamp meters <input type="checkbox"/> High/low voltage detectors <input type="checkbox"/> Multimeters <input type="checkbox"/> Insulation testers		<input type="checkbox"/>		
<input type="checkbox"/>			5.	<input type="checkbox"/> Battery impedance <input type="checkbox"/> Di-electric test sets <input type="checkbox"/> Current clamp meters <input type="checkbox"/> High/low voltage detectors <input type="checkbox"/> Multimeters <input type="checkbox"/> Insulation testers		<input type="checkbox"/>		

Competence: 7. Maintenance and repair of electrical and electronic equipment						Competence Demonstrated Training Officer (Sign/date)	
7.3 – Ensure safety all personnel working on electrical systems required before personnel are permitted to work on such equipment (including electrical equipment safe isolation)							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Reassembling and performance testing is in accordance with manuals and good practice. Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of applying safety measures, isolating and locking-out electrical equipment		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of safe use of electrical equipment for maintenance and testing in hazardous areas		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of safe working practices and procedures including use of appropriate clothing for using power operated tools		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of safe working practices and procedures including use of appropriate clothing for entry into enclosed spaces (tank entry) with electrical equipment		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of safe working practices and procedures including use of appropriate clothing when working on electrical switchboards		<input type="checkbox"/>		

Competence: 7. Maintenance and repair of electrical and electronic equipment							Competence Demonstrated Training Officer (Sign/date)	
7.3 – (Continue) Ensure safety all personnel working on electrical systems required before personnel are permitted to work on such equipment (including electrical equipment safe isolation)								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Reassembling and performance testing is in accordance with manuals and good practice. Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice.</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of safe working practices and procedures including use of appropriate clothing when using lifting gear		<input type="checkbox"/>			
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of safe working practices and procedures including use of appropriate clothing when working within refrigeration machinery spaces		<input type="checkbox"/>			
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of safe working practices and procedures including use of appropriate clothing when working on electrical machinery		<input type="checkbox"/>			
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of the precautions to be taken when testing the insulation of generator cables and wiring connected to an automatic voltage regulator (AVR) unit		<input type="checkbox"/>			
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of the reason why step-down isolating transformers are sometimes used with portable tools and hand lamps		<input type="checkbox"/>			

Competence: 7. Maintenance and repair of electrical and electronic equipment							Competence Demonstrated Training Officer (Sign/date)	
7.4 – Repair and Maintenance of electrical system equipment, switchboards, electric motors, generator and DC electrical systems and equipment								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Reassembling and performance testing is in accordance with manuals and good practice Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice.</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of accurately interpreting information in a system diagram, a circuit diagram and a wiring diagram		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of routine checks and tests on electronic control systems		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of main switchboard and control room console layouts		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding to sketch a circuit diagram and show the arrangements for emergency battery charging for the Engine Room alarm system		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of the vessel's emergency power requirements		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of routine maintenance for main switchboard of contacts and connections		<input type="checkbox"/>			

Competence: 7. Maintenance and repair of electrical and electronic equipment						Competence Demonstrated Training Officer (Sign/date)	
7.4 – (Continue) Repair and Maintenance of electrical system equipment, switchboards, electric motors, generator and DC electrical systems and equipment							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Reassembling and performance testing is in accordance with manuals and good practice</i> <i>Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of the procedure to split the main switchboard		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of switchboard instrumentation and safe working practices associated with its maintenance		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of measuring the insulation resistance of a generator		<input type="checkbox"/>		
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of why insulation testing is best conducted while hot, or at working temperature		<input type="checkbox"/>		
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of insulation tests to be carried on a motor using a Megger		<input type="checkbox"/>		
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of the maintenance of a starter		<input type="checkbox"/>		

Competence: 7. Maintenance and repair of electrical and electronic equipment						Competence Demonstrated Training Officer (Sign/date)	
7.4 – (Continue) Repair and Maintenance of electrical system equipment, switchboards, electric motors, generator and DC electrical systems and equipment							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Reassembling and performance testing is in accordance with manuals and good practice Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			13. Demonstrate knowledge and understanding to sketch a circuit diagram showing the arrangements for battery charging		<input type="checkbox"/>		
<input type="checkbox"/>			14. Demonstrate knowledge and understanding of carrying out routine maintenance and testing on emergency storage batteries		<input type="checkbox"/>		
<input type="checkbox"/>			15. Demonstrate knowledge and understanding of emergency measures to take when someone suffers from an electric shock		<input type="checkbox"/>		
<input type="checkbox"/>			16. Demonstrate knowledge and understanding of the guidance, instructions, safe checks, and practices that need to be followed with reference to electrical safety		<input type="checkbox"/>		
<input type="checkbox"/>			17. Demonstrate knowledge and understanding of the difference between KW, KVA and KVAR		<input type="checkbox"/>		
<input type="checkbox"/>			18. Demonstrate knowledge and understanding of the purpose of the emergency switchboard (ESB) and identify the equipment that draws their power supplies from the ESB		<input type="checkbox"/>		

Competence: 7. Maintenance and repair of electrical and electronic equipment							Competence Demonstrated Training Officer (Sign/date)	
7.4 – (Continue) Repair and Maintenance of electrical system equipment, switchboards, electric motors, generator and DC electrical systems and equipment								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Reassembling and performance testing is in accordance with manuals and good practice Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice.</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			19. Demonstrate knowledge and understanding of how to measure the electrical insulation parameters of a 3-phase motor		<input type="checkbox"/>			
<input type="checkbox"/>			20. Demonstrate knowledge and understanding of measuring the electrical resistance parameters of a 3-phase motor		<input type="checkbox"/>			
<input type="checkbox"/>			21. Demonstrate knowledge and understanding of d measuring the electrical continuity parameters of a 3-phase motor		<input type="checkbox"/>			
<input type="checkbox"/>			22. Demonstrate knowledge and understanding of demonstrate measuring the electrical voltage parameters of a 3-phase motor		<input type="checkbox"/>			
<input type="checkbox"/>			23. Demonstrate knowledge and understanding of demonstrate measuring the electrical current parameters of a 3-phase motor		<input type="checkbox"/>			
<input type="checkbox"/>			24. Demonstrate knowledge and understanding of the common sources of emergency power supplies		<input type="checkbox"/>			

Competence: 7. Maintenance and repair of electrical and electronic equipment						Competence Demonstrated Training Officer (Sign/date)	
7.4 – (Continue) Repair and Maintenance of electrical system equipment, switchboards, electric motors, generator and DC electrical systems and equipment							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Reassembling and performance testing is in accordance with manuals and good practice Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			25. Demonstrate knowledge and understanding of / describe the tests that are carried out for the emergency supply during weekly emergency fire and boat drill practice sessions		<input type="checkbox"/>		
<input type="checkbox"/>			26. Demonstrate knowledge and understanding of the operating principles of the following motor starters and give examples of these on the vessel: Direct online Example:		<input type="checkbox"/>		
<input type="checkbox"/>			27. Start-Delta Example:		<input type="checkbox"/>		
<input type="checkbox"/>			28. Autotransformer Example:		<input type="checkbox"/>		
<input type="checkbox"/>			29. Soft Starting Example:		<input type="checkbox"/>		

Competence: 7. Maintenance and repair of electrical and electronic equipment							Competence Demonstrated Training Officer (Sign/date)	
7.4 – (Continue) Repair and Maintenance of electrical system equipment, switchboards, electric motors, generator and DC electrical systems and equipment								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Reassembling and performance testing is in accordance with manuals and good practice Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			30. Demonstrate knowledge and understanding of how to manually connect/disconnect a running generator to the main switchboard		<input type="checkbox"/>			
<input type="checkbox"/>			31. Demonstrate knowledge and understanding of the meaning of intrinsically safe		<input type="checkbox"/>			
<input type="checkbox"/>			32. Demonstrate knowledge and understanding of the difference between intrinsically safe and flame-proof equipment		<input type="checkbox"/>			

Competence: 7. Maintenance and repair of electrical and electronic equipment							Competence Demonstrated Training Officer (Sign/date)	
7.5 – Electrical faults and malfunctions: Detect, repair and take measures to prevent damage								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Reassembling and performance testing is in accordance with manuals and good practice. Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding to sketch a circuit diagram for the earth indicator lamps on the main switchboard		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of Megger testing for insulation resistance and continuity		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of fault finding on electrical equipment control systems		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of tracing earth faults		<input type="checkbox"/>			

Competence: 7. Maintenance and repair of electrical and electronic equipment							Competence Demonstrated Training Officer (Sign/date)	
7.6 – Correct malfunctions and repair faults								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Reassembling and performance testing is in accordance with manuals and good practice. Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice.</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of repair, maintenance, and fault finding on electronic control systems. List items worked on: <ul style="list-style-type: none"> • • • • • 		<input type="checkbox"/>			

Competence: 7. Maintenance and repair of electrical and electronic equipment							Competence Demonstrated Training Officer (Sign/date)	
7.6 – (Continue) Correct malfunctions and repair faults								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Reassembling and performance testing is in accordance with manuals and good practice. Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of maintenance, repair and fault finding on AC electrical systems. List items worked on: <ul style="list-style-type: none"> • • • • • 		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of maintenance, repair and fault finding on DC electrical systems. List items worked on: <ul style="list-style-type: none"> • • • • • 		<input type="checkbox"/>			

Competence: 7. Maintenance and repair of electrical and electronic equipment						Competence Demonstrated Training Officer (Sign/date)	
7.7 – Detection of electric malfunction, location of faults and measures to prevent damage							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Reassembling and performance testing is in accordance with manuals and good practice. Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of earth faults and how to avoid them		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of tracing and correcting earth faults		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of isolating and locking-out associated equipment when engaged in maintenance or repair work		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of routine testing and maintenance on alarm systems, ensuring that the circuits are isolated, locked-out and protected by notices and that appropriate permits to work are issued		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of correct earthing-down routine for maintenance work on high voltage equipment		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of fault finding on vessel's lighting circuits and component testing		<input type="checkbox"/>		
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of replacing or repairing various types of accommodation lights, cargo hold and deck flood lights		<input type="checkbox"/>		

Competence: 7. Maintenance and repair of electrical and electronic equipment							Competence Demonstrated Training Officer (Sign/date)	
7.8 – Knowledge of the function and performance tests and configuration of monitoring systems, automatic control devices and protective devices								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Reassembling and performance testing is in accordance with manuals and good practice. Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of why there should be separate sensors for monitoring and controlling on any system		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of checking and replacing defective sensors essential for engine operation		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of at least one main engine monitoring system that automatically stops the engine in case of a fault		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of replacing and repairing fuses		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of replacing and repairing control lamps		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of replacing and repairing pressure sensors		<input type="checkbox"/>			
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of replacing and repairing temperature sensors		<input type="checkbox"/>			

Competence: 7. Maintenance and repair of electrical and electronic equipment							Competence Demonstrated Training Officer (Sign/date)	
7.8 – (Continue) Knowledge of the function and performance tests and configuration of monitoring systems, automatic control devices and protective devices								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Reassembling and performance testing is in accordance with manuals and good practice. Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice.</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of routine testing and maintenance of motor starters		<input type="checkbox"/>			
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of routine testing and maintenance of lights		<input type="checkbox"/>			
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of routine testing and maintenance of circuit breakers		<input type="checkbox"/>			
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of routine testing and maintenance of tripping mechanisms		<input type="checkbox"/>			
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of checking alarm settings and pre-sets contained in a system maintenance log		<input type="checkbox"/>			
<input type="checkbox"/>			13. Demonstrate knowledge and understanding of the advantages and disadvantages of DC and AC motors		<input type="checkbox"/>			
<input type="checkbox"/>			14. Demonstrate knowledge and understanding of how an electronic drive control can stop a motor overloading but keep it operating		<input type="checkbox"/>			
<input type="checkbox"/>			15. Demonstrate knowledge and understanding of e heat generated in an electronic drive and how it is dissipated		<input type="checkbox"/>			

FUNCTION: MAINTENANCE AND REPAIR AT THE OPERATIONAL LEVEL

TRAINING TASKS

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board						Competence Demonstrated Training Officer (Sign/date)	
8.1 – Knowledge of Characteristics and limitations of materials and processes used in construction and repair of vessels and equipment’s							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Fabrication is to designated tolerances The identification of important parameters for the fabrication of typical ship-related components is appropriate. The selection of materials is appropriate.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of characteristics, properties, and limitations of mild Steel		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of characteristics, properties, and limitations of high-tensile steel		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of characteristics, properties, and limitations of stainless steel		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of characteristics, properties, and limitations of copper		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of characteristics, properties, and limitations of brass		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of characteristics, properties, and limitations of aluminum alloy		<input type="checkbox"/>		

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board							Competence Demonstrated Training Officer (Sign/date)	
8.2 – Knowledge of characteristics and limitation of processes used for repair and fabrication								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Fabrication is to designated tolerances The identification of important parameters for the fabrication of typical ship-related components is appropriate. The selection of materials is appropriate</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of characteristics, properties, and limitations of welding mild steel		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of characteristics, properties, and limitations of Electric-arc welding		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of characteristics, properties, and limitations of Argon-arc welding		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of characteristics, properties, and limitations of synthetic fixing methods		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of characteristics, properties, and limitations of riveting		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of characteristics, properties, and limitations of brazing		<input type="checkbox"/>			

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board						Competence Demonstrated Training Officer (Sign/date)	
8.3 – Methods for carrying out temporary repairs / safe emergency							
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>Appropriate and safe use of equipment and hand tools, machine tools and measuring instruments.</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of making temporary repairs to leaking pipes		<input type="checkbox"/>		
<input type="checkbox"/>			2. Outline other temporary repairs made: <ul style="list-style-type: none"> • • • • • 		<input type="checkbox"/>		

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board							Competence Demonstrated Training Officer (Sign/date)	
8.4 – Safety measures to be taken to ensure a safe working environment and for using hand tools, machine tools and measuring instruments								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Appropriate and safe use of equipment and hand tools, machine tools and measuring instruments</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of safe working practices and procedures for using power operated tools		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of safe working practices and procedures for using machine tools		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of safe working practices and procedures for using welding equipment		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of donning appropriate personal protective equipment		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of the basic safety precautionary measures in connection with typical “Bench Fitting” activities in the engine room		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of safe and appropriate methods of Chiseling, Hacksawing, Filing, Tapping, and Threading		<input type="checkbox"/>			
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of the basic safety precautionary measures when working in the engine room “Workshop”		<input type="checkbox"/>			

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board						Competence Demonstrated Training Officer (Sign/date)	
8.4 – (Continue) Safety measures to be taken to ensure a safe working environment and for using hand tools, machine tools and measuring instruments							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Appropriate and safe use of equipment and hand tools, machine tools and measuring instruments</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of the basic safety precautionary measures in connection with typical “Workshop Machinery” operation: Lathe, grinding machine, pedestal drilling machine, disc grinder, automatic hacksaw, (milling machine and shaping machine if available)		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of safe and appropriate methods of carrying out a “Drilling” operation with dimensional accuracy		<input type="checkbox"/>		
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of workshop safety precautionary measures on board when “Arc Welding”		<input type="checkbox"/>		
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of the safe and correct method of inspecting lifting gear / tools for handling heavy equipment		<input type="checkbox"/>		

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board						Competence Demonstrated Training Officer (Sign/date)	
8.5 – Using machine tools and hand tools							
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>Appropriate and safe use of equipment and hand tools, machine tools and measuring instruments</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Demonstrate knowledge of different types of cutting tools and their functional purpose		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge of different types of marking tools and their functional purpose		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge of different types of measuring tools and their functional purpose		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the different features of a “Centre Lathe Machine” on board		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge of the different types of usage of “Centre Lathe Machine” in the engine room		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of routine maintenance of a “Centre Lathe Machine”		<input type="checkbox"/>		
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of the appropriate method of reading the “Graduated Scale” of lathe machine		<input type="checkbox"/>		

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board						Competence Demonstrated Training Officer (Sign/date)	
8.5 – (Continue) Using machine tools and hand tools							
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>Appropriate and safe use of equipment and hand tools, machine tools and measuring instruments</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			8. Explain the need for different drill point angles		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of the precautionary measures to be taken when using Electrodes		<input type="checkbox"/>		
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of and/or describe appropriate non-destructive testing methods: Magnetic particle, Ultrasonic, X-Ray, and Visual inspection		<input type="checkbox"/>		
<input type="checkbox"/>			11. Demonstrate knowledge of essential lifting gear / tools for handling heavy equipment		<input type="checkbox"/>		
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of function the spark arrestor and the replacement period required		<input type="checkbox"/>		

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board								Competence Demonstrated Training Officer (Sign/date)			
8.5 – (Continue) Using machine tools and hand tools											
Completion of Task	Training Officer		Fabricated Item and repaired	Hand Tools Used				Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date						Appropriate and safe use of equipment and hand tools, machine tools and measuring instruments		Sign	Date
								Improvement Recommendation			
<input type="checkbox"/>			13.	<input type="checkbox"/> Chisels <input type="checkbox"/> Hand-drills <input type="checkbox"/> Machine tools	<input type="checkbox"/> Saws <input type="checkbox"/> Drill press <input type="checkbox"/> Abrasive wheel	<input type="checkbox"/> Spanners <input type="checkbox"/> Milling machine <input type="checkbox"/> Other	<input type="checkbox"/> Files <input type="checkbox"/> Grinding machine	<input type="checkbox"/>			
<input type="checkbox"/>			14.	<input type="checkbox"/> Chisels <input type="checkbox"/> Hand-drills <input type="checkbox"/> Machine tools	<input type="checkbox"/> Saws <input type="checkbox"/> Drill press <input type="checkbox"/> Abrasive wheel	<input type="checkbox"/> Spanners <input type="checkbox"/> Milling machine <input type="checkbox"/> Other	<input type="checkbox"/> Files <input type="checkbox"/> Grinding machine	<input type="checkbox"/>			
<input type="checkbox"/>			15.	<input type="checkbox"/> Chisels <input type="checkbox"/> Hand-drills <input type="checkbox"/> Machine tools	<input type="checkbox"/> Saws <input type="checkbox"/> Drill press <input type="checkbox"/> Abrasive wheel	<input type="checkbox"/> Spanners <input type="checkbox"/> Milling machine <input type="checkbox"/> Other	<input type="checkbox"/> Files <input type="checkbox"/> Grinding machine	<input type="checkbox"/>			
<input type="checkbox"/>			16.	<input type="checkbox"/> Chisels <input type="checkbox"/> Hand-drills <input type="checkbox"/> Machine tools	<input type="checkbox"/> Saws <input type="checkbox"/> Drill press <input type="checkbox"/> Abrasive wheel	<input type="checkbox"/> Spanners <input type="checkbox"/> Milling machine <input type="checkbox"/> Other	<input type="checkbox"/> Files <input type="checkbox"/> Grinding machine	<input type="checkbox"/>			

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board

Competence Demonstrated
Training Officer
(Sign/date)

8.5 – (Continue) Using machine tools and hand tools

Completion of Task	Training Officer		Fabricated Item and repaired	Hand Tools Used	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date			<i>Appropriate and safe use of equipment and hand tools, machine tools and measuring instruments</i>		Sign	Date
					Improvement Recommendation			
<input type="checkbox"/>			17.	<input type="checkbox"/> Chisels <input type="checkbox"/> Saws <input type="checkbox"/> Spanners <input type="checkbox"/> Files <input type="checkbox"/> Hand-drills <input type="checkbox"/> Drill press <input type="checkbox"/> Milling machine <input type="checkbox"/> Grinding machine <input type="checkbox"/> Machine tools <input type="checkbox"/> Abrasive wheel <input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			18.	<input type="checkbox"/> Chisels <input type="checkbox"/> Saws <input type="checkbox"/> Spanners <input type="checkbox"/> Files <input type="checkbox"/> Hand-drills <input type="checkbox"/> Drill press <input type="checkbox"/> Milling machine <input type="checkbox"/> Grinding machine <input type="checkbox"/> Machine tools <input type="checkbox"/> Abrasive wheel <input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			19.	<input type="checkbox"/> Chisels <input type="checkbox"/> Saws <input type="checkbox"/> Spanners <input type="checkbox"/> Files <input type="checkbox"/> Hand-drills <input type="checkbox"/> Drill press <input type="checkbox"/> Milling machine <input type="checkbox"/> Grinding machine <input type="checkbox"/> Machine tools <input type="checkbox"/> Abrasive wheel <input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			20.	<input type="checkbox"/> Chisels <input type="checkbox"/> Saws <input type="checkbox"/> Spanners <input type="checkbox"/> Files <input type="checkbox"/> Hand-drills <input type="checkbox"/> Drill press <input type="checkbox"/> Milling machine <input type="checkbox"/> Grinding machine <input type="checkbox"/> Machine tools <input type="checkbox"/> Abrasive wheel <input type="checkbox"/> Other		<input type="checkbox"/>		

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board

Competence Demonstrated
 Training Officer
 (Sign/date)

8.5 – (Continue) Using machine tools and hand tools

Completion of Task	Training Officer		Fabricated Item and repaired	Hand Tools Used	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date			Appropriate and safe use of equipment and hand tools, machine tools and measuring instruments		Sign	Date
					Improvement Recommendation			
<input type="checkbox"/>			21.	<input type="checkbox"/> Chisels <input type="checkbox"/> Hand-drills <input type="checkbox"/> Machine tools <input type="checkbox"/> Saws <input type="checkbox"/> Drill press <input type="checkbox"/> Abrasive wheel <input type="checkbox"/> Spanners <input type="checkbox"/> Milling machine <input type="checkbox"/> Other <input type="checkbox"/> Files <input type="checkbox"/> Grinding machine		<input type="checkbox"/>		
<input type="checkbox"/>			22.	<input type="checkbox"/> Chisels <input type="checkbox"/> Hand-drills <input type="checkbox"/> Machine tools <input type="checkbox"/> Saws <input type="checkbox"/> Drill press <input type="checkbox"/> Abrasive wheel <input type="checkbox"/> Spanners <input type="checkbox"/> Milling machine <input type="checkbox"/> Other <input type="checkbox"/> Files <input type="checkbox"/> Grinding machine		<input type="checkbox"/>		
<input type="checkbox"/>			23.	<input type="checkbox"/> Chisels <input type="checkbox"/> Hand-drills <input type="checkbox"/> Machine tools <input type="checkbox"/> Saws <input type="checkbox"/> Drill press <input type="checkbox"/> Abrasive wheel <input type="checkbox"/> Spanners <input type="checkbox"/> Milling machine <input type="checkbox"/> Other <input type="checkbox"/> Files <input type="checkbox"/> Grinding machine		<input type="checkbox"/>		
<input type="checkbox"/>			24.	<input type="checkbox"/> Chisels <input type="checkbox"/> Hand-drills <input type="checkbox"/> Machine tools <input type="checkbox"/> Saws <input type="checkbox"/> Drill press <input type="checkbox"/> Abrasive wheel <input type="checkbox"/> Spanners <input type="checkbox"/> Milling machine <input type="checkbox"/> Other <input type="checkbox"/> Files <input type="checkbox"/> Grinding machine		<input type="checkbox"/>		

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board								Competence Demonstrated Training Officer (Sign/date)		
8.6 – Using measuring instruments										
Completion of Task	<u>Training Officer</u>		Fabricated Item and repaired	Used Measuring equipment			<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date					<i>Correct measurements are taken and checked for compliance with stated tolerances. The selected measuring instruments used for repair and maintenance of machinery and equipment are relevant for the tasks.</i>		Sign	Date
				<input type="checkbox"/> Odd leg calipers	<input type="checkbox"/> Digital calipers	<input type="checkbox"/> Internal micrometer				
			1.	<input type="checkbox"/> Depth gauge	<input type="checkbox"/> Vernier gauge	<input type="checkbox"/> Other		<input type="checkbox"/>		
			2.	<input type="checkbox"/> Odd leg calipers	<input type="checkbox"/> Digital calipers	<input type="checkbox"/> Internal micrometer		<input type="checkbox"/>		
				<input type="checkbox"/> Depth gauge	<input type="checkbox"/> Vernier gauge	<input type="checkbox"/> Other		<input type="checkbox"/>		
			3.	<input type="checkbox"/> Odd leg calipers	<input type="checkbox"/> Digital calipers	<input type="checkbox"/> Internal micrometer		<input type="checkbox"/>		
				<input type="checkbox"/> Depth gauge	<input type="checkbox"/> Vernier gauge	<input type="checkbox"/> Other		<input type="checkbox"/>		
			4.	<input type="checkbox"/> Odd leg calipers	<input type="checkbox"/> Digital calipers	<input type="checkbox"/> Internal micrometer		<input type="checkbox"/>		
				<input type="checkbox"/> Depth gauge	<input type="checkbox"/> Vernier gauge	<input type="checkbox"/> Other		<input type="checkbox"/>		

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board

Competence Demonstrated
Training Officer
 (Sign/date)

8.6 – (Continue) Using measuring instruments

Completion of Task	Training Officer		Fabricated Item and repaired	Used Measuring equipment	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date			Correct measurements are taken and checked for compliance with stated tolerances. The selected measuring instruments used for repair and maintenance of machinery and equipment are relevant for the tasks.		Sign	Date
<input type="checkbox"/>			5.	<input type="checkbox"/> Odd leg calipers <input type="checkbox"/> Digital calipers <input type="checkbox"/> Internal micrometer <input type="checkbox"/> Depth gauge <input type="checkbox"/> Vernier gauge <input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			6.	<input type="checkbox"/> Odd leg calipers <input type="checkbox"/> Digital calipers <input type="checkbox"/> Internal micrometer <input type="checkbox"/> Depth gauge <input type="checkbox"/> Vernier gauge <input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			7.	<input type="checkbox"/> Odd leg calipers <input type="checkbox"/> Digital calipers <input type="checkbox"/> Internal micrometer <input type="checkbox"/> Depth gauge <input type="checkbox"/> Vernier gauge <input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			8.	<input type="checkbox"/> Odd leg calipers <input type="checkbox"/> Digital calipers <input type="checkbox"/> Internal micrometer <input type="checkbox"/> Depth gauge <input type="checkbox"/> Vernier gauge <input type="checkbox"/> Other		<input type="checkbox"/>		

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board								Competence Demonstrated Training Officer (Sign/date)		
8.6 – (Continue) Using measuring instruments										
Completion of Task	Training Officer		Fabricated Item and repaired	Used Measuring equipment			Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date					Correct measurements are taken and checked for compliance with stated tolerances. The selected measuring instruments used for repair and maintenance of machinery and equipment are relevant for the tasks.		Sign	Date
				<input type="checkbox"/> Odd leg calipers	<input type="checkbox"/> Digital calipers	<input type="checkbox"/> Internal micrometer				
				<input type="checkbox"/> Depth gauge	<input type="checkbox"/> Vernier gauge	<input type="checkbox"/> Other				
				<input type="checkbox"/> Odd leg calipers	<input type="checkbox"/> Digital calipers	<input type="checkbox"/> Internal micrometer				
				<input type="checkbox"/> Depth gauge	<input type="checkbox"/> Vernier gauge	<input type="checkbox"/> Other				
				<input type="checkbox"/> Odd leg calipers	<input type="checkbox"/> Digital calipers	<input type="checkbox"/> Internal micrometer				
				<input type="checkbox"/> Depth gauge	<input type="checkbox"/> Vernier gauge	<input type="checkbox"/> Other				
				<input type="checkbox"/> Odd leg calipers	<input type="checkbox"/> Digital calipers	<input type="checkbox"/> Internal micrometer				
				<input type="checkbox"/> Depth gauge	<input type="checkbox"/> Vernier gauge	<input type="checkbox"/> Other				
<input type="checkbox"/>			9.	<input type="checkbox"/> Odd leg calipers	<input type="checkbox"/> Digital calipers	<input type="checkbox"/> Internal micrometer		<input type="checkbox"/>		
<input type="checkbox"/>			10.	<input type="checkbox"/> Depth gauge	<input type="checkbox"/> Vernier gauge	<input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			11.	<input type="checkbox"/> Odd leg calipers	<input type="checkbox"/> Digital calipers	<input type="checkbox"/> Internal micrometer		<input type="checkbox"/>		
<input type="checkbox"/>			12.	<input type="checkbox"/> Depth gauge	<input type="checkbox"/> Vernier gauge	<input type="checkbox"/> Other		<input type="checkbox"/>		

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board						Competence Demonstrated Training Officer (Sign/date)	
8.7 – Using packings and sealants							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Appropriate selection of materials</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of the correct use of various sealants and packing types, and note when gland seals were used:		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the correct use of various sealants and packing types, and note when flanges were used:		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of the correct use of various sealants and packing types, and note when gasketing materials, including compressed, non-asbestos, cork, rubber, and fiber were used:		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the correct use of various sealants and packing types, and note when valve stem packing was used:		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of the correct use of various sealants and packing types, and note when pump seal was used:		<input type="checkbox"/>		

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board						Competence Demonstrated Training Officer (Sign/date)	
8.7 – (Continue) Using packings and sealants							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Appropriate selection of materials</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of the correct use of various sealants and packing types, and note when hydraulic seal was used:		<input type="checkbox"/>		
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of the correct use of various sealants and packing types, and note when O-ring seal was used:		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of the correct use of various sealants and packing types, and note when flange joint sealants were used:		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of the correct use of various sealants and packing types, and note when exhausts and piping jointing were used:		<input type="checkbox"/>		
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of the correct use of various sealants and packing types, and note when Shaft seals/packing were used:		<input type="checkbox"/>		

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board							Competence Demonstrated Training Officer (Sign/date)	
8.8 – Usage of special tools for fabrication and repair work on board								
Completion of Task	Training Officer		Fabricated and repaired machinery or equipment	Special Tools used in repairs or assisted in repairs with others	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date			<i>Choosing the correct tools and used in accordance with instructions, manuals, and safe working practice</i>		Sign	Date
					Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of carrying out dismantling, inspection, repair, and reassembly work of steering gear	<input type="checkbox"/> Hydraulic tools <input type="checkbox"/> Bearing pullers <input type="checkbox"/> Torque wrench <input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of carrying out dismantling, inspection, repair, and reassembly work of engine room pumps and fans	<input type="checkbox"/> Hydraulic tools <input type="checkbox"/> Bearing pullers <input type="checkbox"/> Torque wrench <input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of carrying out dismantling, inspection, repair, and reassembly work of deck winches and windlass	<input type="checkbox"/> Hydraulic tools <input type="checkbox"/> Bearing pullers <input type="checkbox"/> Torque wrench <input type="checkbox"/> Other		<input type="checkbox"/>		

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board								Competence Demonstrated Training Officer (Sign/date)	
8.8 – (Continue) Usage of special tools for fabrication and repair work on board									
Completion of Task	<u>Training Officer</u>		Fabricated and repaired machinery or equipment	Special Tools used in repairs or assisted in repairs with others	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date			<i>Choosing the correct tools and used in accordance with instructions, manuals, and safe working practice</i>		Sign	Date	
					<u>Improvement Recommendation</u>				
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of carrying out dismantling, inspection, and reassembly repair work of galley and catering equipment	<input type="checkbox"/> Hydraulic tools <input type="checkbox"/> Bearing pullers <input type="checkbox"/> Torque wrench <input type="checkbox"/> Other		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of carrying out dismantling, inspection, repair, and reassembly work of air conditioning	<input type="checkbox"/> Hydraulic tools <input type="checkbox"/> Bearing pullers <input type="checkbox"/> Torque wrench <input type="checkbox"/> Other		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of carrying out dismantling, inspection, repair, and reassembly work of purifier	<input type="checkbox"/> Hydraulic tools <input type="checkbox"/> Bearing pullers <input type="checkbox"/> Torque wrench <input type="checkbox"/> Other		<input type="checkbox"/>			

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board								Competence Demonstrated Training Officer (Sign/date)	
8.8 – (Continue) Usage of special tools for fabrication and repair work on board									
Completion of Task	<u>Training Officer</u>		Fabricated and repaired machinery or equipment	Special Tools used in repairs or assisted in repairs with others	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date			<i>Choosing the correct tools and used in accordance with instructions, manuals, and safe working practice</i>		Sign	Date	
					<u>Improvement Recommendation</u>				
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of carrying out dismantling, inspection, repair, and reassembly work of Generators	<input type="checkbox"/> Hydraulic tools <input type="checkbox"/> Bearing pullers <input type="checkbox"/> Torque wrench <input type="checkbox"/> Other		<input type="checkbox"/>			
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of carrying out dismantling, inspection, repair, and reassembly work of the Emergency Generator	<input type="checkbox"/> Hydraulic tools <input type="checkbox"/> Bearing pullers <input type="checkbox"/> Torque wrench <input type="checkbox"/> Other		<input type="checkbox"/>			
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of carrying out dismantling, inspection, repair, and reassembly work of the Emergency Fire Pump	<input type="checkbox"/> Hydraulic tools <input type="checkbox"/> Bearing pullers <input type="checkbox"/> Torque wrench <input type="checkbox"/> Other		<input type="checkbox"/>			

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board								Competence Demonstrated Training Officer (Sign/date)	
8.8 – (Continue) Usage of special tools for fabrication and repair work on board									
Completion of Task	<u>Training Officer</u>		Fabricated and repaired machinery or equipment	Special Tools used in repairs or assisted in repairs with others	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date			<i>Choosing the correct tools and used in accordance with instructions, manuals, and safe working practice</i>		Sign	Date	
					<u>Improvement Recommendation</u>				
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of carrying out dismantling, inspection, repair, and reassembly work of welding machines	<input type="checkbox"/> Hydraulic tools <input type="checkbox"/> Bearing pullers <input type="checkbox"/> Torque wrench <input type="checkbox"/> Other		<input type="checkbox"/>			
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of carrying out dismantling, inspection, repair, and reassembly work of Cranes	<input type="checkbox"/> Hydraulic tools <input type="checkbox"/> Bearing pullers <input type="checkbox"/> Torque wrench <input type="checkbox"/> Other		<input type="checkbox"/>			
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of carrying out dismantling, inspection, repair, and reassembly work of Auxiliary Machinery	<input type="checkbox"/> Hydraulic tools <input type="checkbox"/> Bearing pullers <input type="checkbox"/> Torque wrench <input type="checkbox"/> Other		<input type="checkbox"/>			

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board								Competence Demonstrated Training Officer (Sign/date)	
8.8 – (Continue) Usage of Special tools on board fabrication and repair work									
Completion of Task	Training Officer		Fabricated and repaired machinery or equipment	Special Tools used in repairs or assisted in repairs with others	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date			<i>Choosing the correct tools and used in accordance with instructions, manuals, and safe working practice</i>		Sign	Date	
					Improvement Recommendation				
<input type="checkbox"/>			13. Demonstrate knowledge and understanding of carrying out dismantling, inspection, repair, and reassembly work of	<input type="checkbox"/> Hydraulic tools <input type="checkbox"/> Bearing pullers <input type="checkbox"/> Torque wrench <input type="checkbox"/> Other		<input type="checkbox"/>			
<input type="checkbox"/>			14. Demonstrate knowledge and understanding of carrying out dismantling, inspection, repair, and reassembly work of	<input type="checkbox"/> Hydraulic tools <input type="checkbox"/> Bearing pullers <input type="checkbox"/> Torque wrench <input type="checkbox"/> Other		<input type="checkbox"/>			
<input type="checkbox"/>			15. Demonstrate knowledge and understanding of carrying out dismantling, inspection, repair, and reassembly work of	<input type="checkbox"/> Hydraulic tools <input type="checkbox"/> Bearing pullers <input type="checkbox"/> Torque wrench <input type="checkbox"/> Other		<input type="checkbox"/>			

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board

Competence Demonstrated
Training Officer
 (Sign/date)

8.9 – Usage of machine tools and welding equipment for fabrication and repairs

Completion of Task	Training Officer		Fabricated or repaired parts	Used Machine Tools			Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date					The selected material is suitable for the part to be fabricated and the work is carried out within the designated tolerances and in accordance with safe working practice		Sign	Date
<input type="checkbox"/>			1.	<input type="checkbox"/> Centre lathes <input type="checkbox"/> Plasma/ Gas Cutting	<input type="checkbox"/> Drill press <input type="checkbox"/> Electric arc welding	<input type="checkbox"/> Gas welding /brazing <input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			2.	<input type="checkbox"/> Centre lathes <input type="checkbox"/> Plasma/ Gas Cutting	<input type="checkbox"/> Drill press <input type="checkbox"/> Electric arc welding	<input type="checkbox"/> Gas welding /brazing <input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			3.	<input type="checkbox"/> Centre lathes <input type="checkbox"/> Plasma/ Gas Cutting	<input type="checkbox"/> Drill press <input type="checkbox"/> Electric arc welding	<input type="checkbox"/> Gas welding /brazing <input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			4.	<input type="checkbox"/> Centre lathes <input type="checkbox"/> Plasma/ Gas Cutting	<input type="checkbox"/> Drill press <input type="checkbox"/> Electric arc welding	<input type="checkbox"/> Gas welding /brazing <input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			5.	<input type="checkbox"/> Centre lathes <input type="checkbox"/> Plasma/ Gas Cutting	<input type="checkbox"/> Drill press <input type="checkbox"/> Electric arc welding	<input type="checkbox"/> Gas welding /brazing <input type="checkbox"/> Other		<input type="checkbox"/>		

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board								Competence Demonstrated Training Officer (Sign/date)		
8.9 – (Continue) Usage of machine tools and welding equipment for fabrication and repairs										
Completion of Task	Training Officer		Fabricated or repaired parts	Used Machine Tools			Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date					<i>The selected material is suitable for the part to be fabricated and the work is carried out within the designated tolerances and in accordance with safe working practice</i>		Sign	Date
				<input type="checkbox"/> Centre lathes	<input type="checkbox"/> Drill press	<input type="checkbox"/> Gas welding /brazing	Improvement Recommendation			
<input type="checkbox"/>			6.	<input type="checkbox"/> Plasma/ Gas Cutting	<input type="checkbox"/> Electric arc welding	<input type="checkbox"/> Other			<input type="checkbox"/>	
<input type="checkbox"/>			7.	<input type="checkbox"/> Centre lathes	<input type="checkbox"/> Drill press	<input type="checkbox"/> Gas welding /brazing		<input type="checkbox"/>		
<input type="checkbox"/>			8.	<input type="checkbox"/> Plasma/ Gas Cutting	<input type="checkbox"/> Electric arc welding	<input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			9.	<input type="checkbox"/> Centre lathes	<input type="checkbox"/> Drill press	<input type="checkbox"/> Gas welding /brazing		<input type="checkbox"/>		
<input type="checkbox"/>			10.	<input type="checkbox"/> Plasma/ Gas Cutting	<input type="checkbox"/> Electric arc welding	<input type="checkbox"/> Other		<input type="checkbox"/>		

Competence: 8. Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board

Competence Demonstrated
Training Officer
 (Sign/date)

8.9 – (Continue) Usage of machine tools and welding equipment for fabrication and repairs

Completion of Task	Training Officer		Fabricated or repaired parts	Used Machine Tools			Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date					<i>The selected material is suitable for the part to be fabricated and the work is carried out within the designated tolerances and in accordance with safe working practice</i>		Sign	Date
<input type="checkbox"/>			11.	<input type="checkbox"/> Centre lathes <input type="checkbox"/> Plasma/Gas Cutting	<input type="checkbox"/> Drill press <input type="checkbox"/> Electric arc welding	<input type="checkbox"/> Gas welding /brazing <input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			12.	<input type="checkbox"/> Centre lathes <input type="checkbox"/> Plasma/Gas Cutting	<input type="checkbox"/> Drill press <input type="checkbox"/> Electric arc welding	<input type="checkbox"/> Gas welding /brazing <input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			13.	<input type="checkbox"/> Centre lathes <input type="checkbox"/> Plasma/Gas Cutting	<input type="checkbox"/> Drill press <input type="checkbox"/> Electric arc welding	<input type="checkbox"/> Gas welding /brazing <input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			14.	<input type="checkbox"/> Centre lathes <input type="checkbox"/> Plasma/Gas Cutting	<input type="checkbox"/> Drill press <input type="checkbox"/> Electric arc welding	<input type="checkbox"/> Gas welding /brazing <input type="checkbox"/> Other		<input type="checkbox"/>		
<input type="checkbox"/>			15.	<input type="checkbox"/> Centre lathes <input type="checkbox"/> Plasma/Gas Cutting	<input type="checkbox"/> Drill press <input type="checkbox"/> Electric arc welding	<input type="checkbox"/> Gas welding /brazing <input type="checkbox"/> Other		<input type="checkbox"/>		

Competence: 9. Maintenance and repair of shipboard machinery and equipment						Competence Demonstrated Training Officer (Sign/date)	
9.1 – Locating and using relevant data sources, drawings, and manuals							
Prior to starting any maintenance or repair work ensure that you have completed the tasks concerned with Safety at Work on page 26. In addition, ensure that you are familiar with the procedures for safe isolation of electrical equipment on your ship, and that you are in possession of an appropriate permit to work.							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Quickly identified and properly used the manufacturers' instructions and drawings relevant for the job.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of the vessel's Planned Maintenance System		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of manufacturers' instructions and drawings for use in maintenance tasks		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of items to be in a Planned Maintenance System		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of inputs to the vessel's Planned Maintenance System		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of retrieving reports from a computer-based maintenance system		<input type="checkbox"/>		
<input type="checkbox"/>			6. If possible, participate in a survey of running machinery using condition monitoring equipment,		<input type="checkbox"/>		

Competence: 9. Maintenance and repair of shipboard machinery and equipment						Competence Demonstrated Training Officer (Sign/date)	
9.1 – (Continue) Locating and using relevant data sources, drawings, and manuals							
Prior to starting any maintenance or repair work ensure that you have completed the tasks concerned with Safety at Work on page 26. In addition, ensure that you are familiar with the procedures for safe isolation of electrical equipment on your ship, and that you are in possession of an appropriate permit to work							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		Quickly identified and properly used the manufacturers' instructions and drawings relevant for the job.		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of interpretation of results of running machinery surveys		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of how items of spare gear are maintained and stored in good condition		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of critical spare parts remaining on board (ROB)		<input type="checkbox"/>		

Competence: 9. Maintenance and repair of shipboard machinery and equipment							Competence Demonstrated Training Officer (Sign/date)	
9.2 – Ensuring safety of all personnel working on equipment and plant								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>In accordance with accepted safe working practices and procedures: Isolation, dismantling, and reassembly of plant and equipment</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of special precautions to be taken when repairing and maintaining hazardous areas		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of safe working practices and procedures for Usage of Portable Power Operated Tools		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of safe working practices and procedures for Access into enclosed spaces (tank entry)		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the term “Enclosed space”, identifying the typical enclosed space onboard a modern tanker		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of the requirement for oxygen/ toxic/ flammable gas content inside a space before it is deemed fit for man entry		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of the objectives of the Risk Assessment System		<input type="checkbox"/>			
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of the purpose of the hot work permit and instances when the same is required to be maintained on board		<input type="checkbox"/>			

Competence: 9. Maintenance and repair of shipboard machinery and equipment							Competence Demonstrated Training Officer (Sign/date)	
9.2 – (Continue) Ensuring safety of all personnel working on equipment and plant								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>In accordance with accepted safe working practices and procedures: Isolation, dismantling, and reassembly of plant and equipment</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of the inspection and correct use of the various type of Personal Protective Equipment		<input type="checkbox"/>			
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of safe working practices and procedures for work beneath floor plates		<input type="checkbox"/>			
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of safe working practices and procedures for lifting gear usage		<input type="checkbox"/>			
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of safe working practices and procedures for moving heavy machinery		<input type="checkbox"/>			
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of safe working practices and procedures for working within refrigeration machinery spaces		<input type="checkbox"/>			
<input type="checkbox"/>			13. Demonstrate knowledge and understanding of safe working practices and procedures for working on electrical machinery		<input type="checkbox"/>			
<input type="checkbox"/>			14. Demonstrate knowledge and understanding of safe working practices and procedures for disposal of oily waste materials		<input type="checkbox"/>			

Competence: 9. Maintenance and repair of shipboard machinery and equipment						Competence Demonstrated Training Officer (Sign/date)	
9.2 – (Continue) Ensuring safety of all personnel working on equipment and plant							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>In accordance with accepted safe working practices and procedures: Isolation, dismantling, and reassembly of plant and equipment</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			15. Demonstrate knowledge and understanding of safe working practices and procedures for using appropriate protective clothing		<input type="checkbox"/>		
<input type="checkbox"/>			16. Demonstrate knowledge and understanding of safe working practices and procedures for working at heights		<input type="checkbox"/>		
<input type="checkbox"/>			17. Demonstrate knowledge and understanding of safe working practices and procedures for lifting and carrying manually		<input type="checkbox"/>		
<input type="checkbox"/>			18. Demonstrate knowledge and understanding of the main requirements of the International Safety Management (ISM) Code		<input type="checkbox"/>		
<input type="checkbox"/>			19. Refer to Item 20.		<input type="checkbox"/>		
<input type="checkbox"/>			20. (Including 19) Demonstrate knowledge and understanding of the risks and hazards associated with electrical hand tools and equipment		<input type="checkbox"/>		
<input type="checkbox"/>			21. Demonstrate knowledge and understanding of the roles and responsibilities of a shipboard safety officer		<input type="checkbox"/>		

Competence: 9. Maintenance and repair of shipboard machinery and equipment						Competence Demonstrated Training Officer (Sign/date)	
9.2 – (Continue) Ensuring safety of all personnel working on equipment and plant							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>In accordance with accepted safe working practices and procedures: Isolation, dismantling, and reassembly of plant and equipment</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			22. Demonstrate knowledge and understanding of familiarity with Muster lists and alternative lists on board and the assigned duties		<input type="checkbox"/>		
<input type="checkbox"/>			23. Demonstrate knowledge and understanding of the different emergency escape routes in the engine room		<input type="checkbox"/>		
<input type="checkbox"/>			24. Demonstrate knowledge and understanding of procedures for operating, testing and calibrating the following portable gas measuring devices: - Oxygen analyzers		<input type="checkbox"/>		
<input type="checkbox"/>			25. - Catalytic combustible gas indicators		<input type="checkbox"/>		
<input type="checkbox"/>			26. - Non-catalytic heated filament gas indicators		<input type="checkbox"/>		
<input type="checkbox"/>			27. - Multi-point flammable gas monitors		<input type="checkbox"/>		
<input type="checkbox"/>			28. - Toxicity detectors		<input type="checkbox"/>		

Competence: 9. Maintenance and repair of shipboard machinery and equipment							Competence Demonstrated Training Officer (Sign/date)	
9.3 – Undertake repair and maintenance of shipboard machinery and equipment								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		Repairing dismantling, reassembling, and inspecting equipment is in accordance with manuals and good practice. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of measuring and logging readings of crankshaft deflections		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of changing, inspecting, checking the condition, wear and clearance, overhauling, and testing inlet valves when appropriate		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of changing, inspecting, checking the condition, wear and clearance, overhauling, and testing fuel injection valves as appropriate		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of changing, inspecting, checking the condition, wear and clearance, overhauling, and testing air start valves as appropriate		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of changing, inspecting, checking the condition, wear and clearance, overhauling, and testing relief valves as appropriate		<input type="checkbox"/>			

<input type="checkbox"/>			6. Demonstrate knowledge and understanding of changing, inspecting, checking the condition, wear and clearance, overhauling, and testing exhaust valves as appropriate		<input type="checkbox"/>		
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of changing, inspecting, checking the condition, wear and clearance, overhauling, and testing fuel pumps as appropriate		<input type="checkbox"/>		

Competence: 9. Maintenance and repair of shipboard machinery and equipment						Competence Demonstrated Training Officer (Sign/date)	
9.3 – (Continue) Undertake repair and maintenance of shipboard machinery and equipment							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Repairing dismantling, reassembling, and inspecting equipment is in accordance with manuals and good practice. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of changing, inspecting, checking the condition, wear and clearance, overhauling, and testing Camshafts as appropriate		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of changing, inspecting, checking the condition, wear and clearance, overhauling, and testing crosshead bearings as appropriate		<input type="checkbox"/>		
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of changing, inspecting, checking the condition, wear and clearance, overhauling, and testing fuel oil filters as appropriate		<input type="checkbox"/>		
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of as appropriate, change, inspect, check condition, wear and clearance, overhaul, and test lubricating oil filters		<input type="checkbox"/>		
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of changing, inspecting, checking the condition, wear and clearance, overhauling, and testing air filters as appropriate		<input type="checkbox"/>		

<input type="checkbox"/>			13. Demonstrate knowledge and understanding of using turning gear, under supervision, taking all safety precautions		<input type="checkbox"/>		
<input type="checkbox"/>			14. Demonstrate knowledge and understanding of overhauling and/or changing the main engine pistons, checking clearances, where appropriate		<input type="checkbox"/>		

Competence: 9. Maintenance and repair of shipboard machinery and equipment							Competence Demonstrated Training Officer (Sign/date)	
9.3 – (Continue) Undertake repair and maintenance of shipboard machinery and equipment								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Repairing dismantling, reassembling, and inspecting equipment is in accordance with manuals and good practice. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			15. Demonstrate knowledge and understanding of overhauling and/or changing the main engine cylinder heads, checking clearances, where appropriate		<input type="checkbox"/>			
<input type="checkbox"/>			16. Demonstrate knowledge and understanding of overhauling and/or changing the main engine turbochargers, checking clearances, where appropriate		<input type="checkbox"/>			
<input type="checkbox"/>			17. Demonstrate knowledge and understanding of overhauling and/or changing the main engine top-end bearings, checking clearances, where appropriate		<input type="checkbox"/>			
<input type="checkbox"/>			18. Demonstrate knowledge and understanding of overhauling and/or changing the main engine bottom- end bearings, checking clearances, where appropriate		<input type="checkbox"/>			
<input type="checkbox"/>			19. Demonstrate knowledge and understanding of overhauling and/or changing the main engine indicator cocks, checking clearances, where appropriate		<input type="checkbox"/>			
<input type="checkbox"/>			20. Demonstrate knowledge and understanding of overhauling and/or changing the main engine main bearings, checking clearances, where appropriate		<input type="checkbox"/>			
<input type="checkbox"/>			21. Demonstrate knowledge and understanding of overhauling and/or changing the main engine piston-rod scraper box/stuffing box, checking clearances, where appropriate		<input type="checkbox"/>			

Competence: 9. Maintenance and repair of shipboard machinery and equipment							Competence Demonstrated Training Officer (Sign/date)	
9.3 – (Continue) Undertake repair and maintenance of shipboard machinery and equipment								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Repairing dismantling, reassembling, and inspecting equipment is in accordance with manuals and good practice. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			22. Demonstrate knowledge and understanding of overhaul and/or changing the main engine Crosshead guides, checking clearances, where appropriate		<input type="checkbox"/>			
<input type="checkbox"/>			23. Demonstrate knowledge and understanding of overhauling and/or changing the main engine Tie bolts, checking clearances, where appropriate		<input type="checkbox"/>			
<input type="checkbox"/>			24. Demonstrate knowledge and understanding of overhauling and/or changing the main engine Holding-down bolts and chocks, checking clearances, where appropriate		<input type="checkbox"/>			
<input type="checkbox"/>			25. Demonstrate knowledge and understanding of inspecting scavenge trunk and exhaust spaces and reporting on cleanliness/deposits		<input type="checkbox"/>			
<input type="checkbox"/>			26. Demonstrate knowledge and understanding of inspecting scavenge trunk and exhaust spaces and reporting on scavenge drains		<input type="checkbox"/>			
<input type="checkbox"/>			27. Demonstrate knowledge and understanding of inspecting scavenge trunk and exhaust spaces and report on scavenge valves		<input type="checkbox"/>			
<input type="checkbox"/>			28. Demonstrate knowledge and understanding of inspecting scavenge trunk and exhaust spaces and carrying out a crankcase inspection		<input type="checkbox"/>			

Competence: 9. Maintenance and repair of shipboard machinery and equipment						Competence Demonstrated Training Officer (Sign/date)	
9.4 – Undertake auxiliary engine maintenance and repair							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>In accordance with manuals and good practice: Dismantling, inspecting, repairing, and reassembling equipment. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of measuring and logging readings of crankshaft deflections		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of checking the condition, changing, inspecting, wear and clearance, overhauling, and testing fuel injection valves		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of checking the condition, changing, inspecting, wear and clearance, overhauling, and testing relief valves		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of checking the condition, changing, inspecting, wear and clearance, overhauling, and testing air-start valves		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of checking the condition, changing, inspecting, wear and clearance, overhauling, and testing exhaust valves		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of checking the condition, changing, inspecting, wear and clearance, overhauling, and testing inlet valves		<input type="checkbox"/>		

Competence: 9. Maintenance and repair of shipboard machinery and equipment							Competence Demonstrated Training Officer (Sign/date)	
9.4 – (Continue) Undertake auxiliary engine maintenance and repair								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>In accordance with manuals and good practice: Dismantling, inspecting, repairing, and reassembling equipment. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of checking the condition, changing, inspecting, wear and clearance, overhauling, and testing fuel pumps		<input type="checkbox"/>			
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of checking the condition, changing, inspecting wear and clearance, overhauling, and testing fuel oil filters		<input type="checkbox"/>			
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of checking the condition, changing, inspecting wear and clearance, overhauling, and testing lubricating oil filters		<input type="checkbox"/>			
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of checking the condition, changing, inspecting wear and clearance, overhauling, and testing Jacket cooling water pump		<input type="checkbox"/>			
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of checking the condition, changing, inspecting wear and clearance, overhauling, and testing air filters		<input type="checkbox"/>			
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of checking the condition, changing, inspecting wear and clearance, overhauling, and testing Camshaft		<input type="checkbox"/>			

Competence: 9. Maintenance and repair of shipboard machinery and equipment						Competence Demonstrated Training Officer (Sign/date)	
9.4 – (Continue) Undertake auxiliary engine maintenance and repair							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>In accordance with manuals and good practice: Dismantling, inspecting, repairing, and reassembling equipment. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			13. Demonstrate knowledge and understanding of changing and/or overhauling, checking and adjusting clearances of pistons, when necessary		<input type="checkbox"/>		
<input type="checkbox"/>			14. Demonstrate knowledge and understanding of changing and/or overhauling, checking and adjusting clearances of cylinder heads, when necessary		<input type="checkbox"/>		
<input type="checkbox"/>			15. Demonstrate knowledge and understanding of, changing and/or overhauling, checking and adjusting clearances of top-end bearings, when necessary		<input type="checkbox"/>		
<input type="checkbox"/>			16. Demonstrate knowledge and understanding of changing and/or overhauling, checking and adjusting clearances of turbocharges, when necessary		<input type="checkbox"/>		
<input type="checkbox"/>			17. Demonstrate knowledge and understanding of changing and/or overhauling, checking and adjusting clearances of bottom-end bearings, when necessary		<input type="checkbox"/>		
<input type="checkbox"/>			18. Demonstrate knowledge and understanding of changing and/or overhauling, checking and adjusting clearances of Indicator cocks, when necessary		<input type="checkbox"/>		

Competence: 9. Maintenance and repair of shipboard machinery and equipment						Competence Demonstrated Training Officer (Sign/date)	
9.4 – (Continue) Undertake auxiliary engine maintenance and repair							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>In accordance with manuals and good practice: Dismantling, inspecting, repairing, and reassembling equipment. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			19. Demonstrate knowledge and understanding of changing and/or overhauling, checking and adjusting clearances of main bearings, when necessary		<input type="checkbox"/>		
<input type="checkbox"/>			20. Demonstrate knowledge and understanding of changing and/or overhauling, checking and adjusting clearances of holding-down bolts and chocks, when necessary		<input type="checkbox"/>		
<input type="checkbox"/>			21. Demonstrate knowledge and understanding of conducting a crankcase inspection		<input type="checkbox"/>		
<input type="checkbox"/>			22. Demonstrate knowledge and understanding of commissioning an engine after overhaul		<input type="checkbox"/>		

Competence: 9. Maintenance and repair of shipboard machinery and equipment						Competence Demonstrated Training Officer (Sign/date)	
9.5 – Carry out the auxiliary boiler maintenance and repair							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>In accordance with manuals and good practice: Dismantling, inspecting, repairing, and reassembling equipment. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of taking a boiler out of service		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of isolating a boiler		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of the procedure for blow-down of a boiler		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of opening up a boiler		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of Boiler examination and reporting its internal condition		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of Boiler examination and reporting its external condition		<input type="checkbox"/>		

Competence: 9. Maintenance and repair of shipboard machinery and equipment						Competence Demonstrated Training Officer (Sign/date)	
9.5 – (Continue) Carry out the auxiliary boiler maintenance and repair							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>In accordance with manuals and good practice: Dismantling, inspecting, repairing, and reassembling equipment. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of opening up and inspecting safety valves		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of opening up and inspecting feed check valves		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of opening up and inspecting ancillary valves		<input type="checkbox"/>		
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of testing and overhauling the water gauge glass and checking if the passages, cocks, and valves are clear		<input type="checkbox"/>		
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of overhauling and changing burners		<input type="checkbox"/>		

Competence: 9. Maintenance and repair of shipboard machinery and equipment						Competence Demonstrated Training Officer (Sign/date)	
9.6 – Carry out plant and equipment maintenance and repair							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>In accordance with manuals and good practice: Dismantling, inspecting, repairing, and reassembling equipment. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of opening up and reassembling purifiers/separators for maintenance and cleaning		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of carrying out routine maintenance of main compressors		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of checking and servicing control air filters		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of checking and servicing control air driers and replacing desiccant		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of undertaking routine maintenance of refrigeration plant		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of undertaking routine maintenance of freshwater generators		<input type="checkbox"/>		

Competence: 9. Maintenance and repair of shipboard machinery and equipment						Competence Demonstrated Training Officer (Sign/date)	
9.6 – (Continue) Carry out plant and equipment maintenance and repair							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>In accordance with manuals and good practice: Dismantling, inspecting, repairing, and reassembling equipment. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of opening up and overhauling positive displacement pumps		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of opening up and overhauling centrifugal pumps		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of overhauling and testing valves including screw-lift valves, shut-off cocks, stop-disk non-return valves, two or three-way valves, gate valves and relief valves		<input type="checkbox"/>		

Competence: 9. Maintenance and repair of shipboard machinery and equipment						Competence Demonstrated Training Officer (Sign/date)	
9.6 – (Continue) Carry out plant and equipment maintenance and repair							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>In accordance with manuals and good practice: Dismantling, inspecting, repairing, and reassembling equipment. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of undertaking routine maintenance of anchor windlasses		<input type="checkbox"/>		
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of undertaking routine maintenance of cargo winches		<input type="checkbox"/>		
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of undertaking routine maintenance of cargo cranes		<input type="checkbox"/>		
<input type="checkbox"/>			13. Demonstrate knowledge and understanding of undertaking routine maintenance of mooring winches		<input type="checkbox"/>		
<input type="checkbox"/>			14. Demonstrate knowledge and understanding of undertaking routine maintenance of capstans		<input type="checkbox"/>		
<input type="checkbox"/>			15. Demonstrate knowledge and understanding of undertaking routine maintenance of hatch covers		<input type="checkbox"/>		

Competence: 9. Maintenance and repair of shipboard machinery and equipment						Competence Demonstrated Training Officer (Sign/date)	
9.6 – (Continue) Carry out plant and equipment maintenance and repair							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>In accordance with manuals and good practice: Dismantling, inspecting, repairing, and reassembling equipment. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			16. Demonstrate knowledge and understanding of undertaking routine maintenance of steering gear		<input type="checkbox"/>		
<input type="checkbox"/>			17. Demonstrate knowledge and understanding of undertaking routine maintenance of engine room lifting gear		<input type="checkbox"/>		
<input type="checkbox"/>			18. Outline other items of plant and equipment on which you have worked: 19. <ul style="list-style-type: none"> • • • • 		<input type="checkbox"/>		

Competence: 9. Maintenance and repair of shipboard machinery and equipment						Competence Demonstrated Training Officer (Sign/date)	
9.7 – Carry out emergency equipment maintenance and repair							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Correct tools are chosen and used without causing damage to machinery or equipment. Isolation, dismantling, and reassembly is in accordance with accepted practices and procedures.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of conducting routine maintenance of fire pumps		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of conducting routine maintenance of fire flaps		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of conducting routine maintenance of Engine Room fire extinguishing systems and equipment		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of conducting routine maintenance of emergency generators		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of conducting routine maintenance of emergency compressors		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of conducting routine maintenance of remote stops for pumps with overboard discharges		<input type="checkbox"/>		
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of conducting routine maintenance of fuel valve trips		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of conducting routine maintenance of breathing apparatus sets and recharging breathing apparatus bottles		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of conducting routine maintenance of survival craft		<input type="checkbox"/>		

FUNCTION: CONTROLLING THE OPERATION OF THE SHIP AND CARE FOR PERSONS ON BOARD THE OPERATIONAL LEVEL

TRAINING Tasks

Competence: 10. Application of leadership and Team Working Skills							Competence Demonstrated Training Officer (Sign/date)	
10.1 – Plays team role								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Demonstrate understanding of others operating in the same area and have common goals. communicate with an understood language. Challenges questionable decisions in a seamanlike manner. Exchange information freely on the maneuver or task handled</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding that each person has different experiences as a team member and has a role to play in any task		<input type="checkbox"/>			
<input type="checkbox"/>			2. Actively engage in task planning meetings involving different ranks		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding that communication is a two-way exchange both in the engine room and when working on deck		<input type="checkbox"/>			

Competence: 10. Application of leadership and teamworking						Competence Demonstrated Training Officer (Sign/date)	
10.1 – (Continue) Plays team role							
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>Demonstrate understanding of others operating in the same area and have common goals. communicate with an understood language. Challenges questionable decisions in a seamanlike manner. Exchange information freely on the maneuver or task handled</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of maintaining awareness of changing circumstances and situations		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of accepting authority while questioning instructions if uncertain		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of checking own understanding of a situation is shared by other team members		<input type="checkbox"/>		
<input type="checkbox"/>			7. Participate actively in evaluation meetings and in task review involving different ranks		<input type="checkbox"/>		

Competence: 10. Application of leadership and teamworking						Competence Demonstrated Training Officer (Sign/date)	
10.2 – Demonstrate leadership ability							
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>Initiative is taken and others are coordinated alongside, and tasks are carried out in timely way</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of setting priorities correctly where conflict between immediate needs and tasks that may be held back are observed		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of allocating resources effectively to achieve desired outcomes		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of checking results and taking corrective actions as necessary/instructed		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the need to refer to senior officers if/when in doubt		<input type="checkbox"/>		

Competence: 11. Ensure compliance with pollution prevention requirements						Competence Demonstrated Training Officer (Sign/date)	
11.1 – Implementing pro-active measures to protect the marine environment							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Ensures that a positive environmental reputation is maintained. The operations are properly planned and comply with international regulation in spirit as well as in word.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding that environmental protection includes both sea and air, protected by mandatory MARPOL Convention regulations		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the capability to extract relevant regulations from 'MARPOL 73/78, as amended		<input type="checkbox"/>		
<input type="checkbox"/>			3. List minimum two Particularly Sensitive Sea Areas (PSSAs) <ul style="list-style-type: none"> • • • • 		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of environmental requirements for 'Special Areas' as defined in Annex I, MARPOL 73/78, as amended		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of preparedness to take personal responsibility for actions to protect the marine environment, by example		<input type="checkbox"/>		

Competence: 11. Ensure compliance with pollution prevention requirements						Competence Demonstrated Training Officer (Sign/date)	
11.1 – (Continue) Implementing pro-active measures to protect the marine environment							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Ensures that a positive environmental reputation is maintained. The operations are properly planned and comply with international regulation in spirit as well as in word.</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of that marine pollutants must be landed ashore for safe disposal in compliance with MARPOL		<input type="checkbox"/>		
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of the strict rules applicable to the storage and disposal of oily water mixtures covering all vessels		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of the strict rules applicable to disposal of noxious liquid substances covering all vessels		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of the strict rules covering disposal of harmful substances carried in packaged form applicable to all vessels		<input type="checkbox"/>		
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of the strict rules applicable to pollution prevention by sewage covering all vessels		<input type="checkbox"/>		
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of the strict rules applicable to prevention of pollution by garbage covering all vessels		<input type="checkbox"/>		
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of garbage handling requirements		<input type="checkbox"/>		

Competence: 11. Ensure compliance with pollution prevention requirements						Competence Demonstrated Training Officer (Sign/date)	
11.1 – (Continue) Implementing pro-active measures to protect the marine environment							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Ensures that a positive environmental reputation is maintained. The operations are properly planned and comply with international regulation in spirit as well as in word.</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			13. Demonstrate knowledge and understanding of the strict rules that are applicable to prevent air pollution from all vessels		<input type="checkbox"/>		
<input type="checkbox"/>			14. Demonstrate knowledge and understanding of the regulations related to "Air Emission" issues in port		<input type="checkbox"/>		
<input type="checkbox"/>			15. Demonstrate knowledge and understanding of the impact of SOx, NOx, VOC and PM and why efforts are needed to reduce atmospheric pollution		<input type="checkbox"/>		
<input type="checkbox"/>			16. Demonstrate knowledge and understanding of the preventive actions that may be implemented on board to minimize risk of a "Detailed Inspection & Likely Detention" by Port State Control with reference to: - Oil Record Book		<input type="checkbox"/>		
<input type="checkbox"/>			17. - International Safety Management (ISM) policies and procedures		<input type="checkbox"/>		
<input type="checkbox"/>			18. - Muster List (Duties)		<input type="checkbox"/>		

Competence: 11. Ensure compliance with pollution prevention requirements						Competence Demonstrated Training Officer (Sign/date)	
11.1 – (Continue) Implementing pro-active measures to protect the marine environment							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Ensures that a positive environmental reputation is maintained. The operations are properly planned and comply with international regulation in spirit as well as in word.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			19. - Communications		<input type="checkbox"/>		
<input type="checkbox"/>			20. - Boat and Fire Drills		<input type="checkbox"/>		
<input type="checkbox"/>			21. - Shipboard Oil Pollution and Emergency Plan (SOPEP)		<input type="checkbox"/>		
<input type="checkbox"/>			22. - Log Books		<input type="checkbox"/>		
<input type="checkbox"/>			23. - Fire Control Plans		<input type="checkbox"/>		

Competence: 11. Ensure compliance with pollution prevention requirements						Competence Demonstrated Training Officer (Sign/date)	
11.2 – Prior bunkering ensure that procedures are agreed and planned properly							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Properly planned operations, all scuppers are blocked and pipes and hoses inspected prior bunkering takes place</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of the need to plug deck scuppers		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the vessel's bunkering procedures		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of how to assist with bunkering operations		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the emergency shut-down procedure		<input type="checkbox"/>		

Competence: 11. Ensure compliance with pollution prevention requirements						Competence Demonstrated Training Officer (Sign/date)	
11.3 – Immediate investigation to be initiated to detect the source on discovering pollution around the vessel							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The master or authorities are informed as appropriate. All available resources are utilized to detect the source.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of, and participation where possible, emergency response drills for controlling spillage of oil or other noxious or toxic substances on board		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the importance of immediately reporting and investigating potential pollution incidents		<input type="checkbox"/>		
11.4 – Prevent or stop leakages and spills of harmful liquid and solid substances				<i>Thoroughly assessed the situation and the actions taken are well organized and exercised. Due consideration taken of the extent of the pollution</i>	<input type="checkbox"/>		
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of the usage of Material Safety Data Sheets and the IMDG Code to obtain information on cargo hazards and handling instructions		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of, and participation where possible, drills for clean-up of hazardous spillage		<input type="checkbox"/>		

Competence: 11. Ensure compliance with pollution prevention requirements						Competence Demonstrated Training Officer (Sign/date)	
11.5 – If any damage is suspected; sound all tanks and compartments							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The soundings are readily available. Results reported immediately to the master.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of, and participation where possible, an emergency response drill for stranding		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of, carrying out soundings of peak, double-bottom and bilge tanks, and other relevant tanks, and recording appropriate information if any hull damage is suspected		<input type="checkbox"/>		

Competence: 11. Ensure compliance with pollution prevention requirements						Competence Demonstrated Training Officer (Sign/date)	
11.6 – Carry out bilge, ballast, and bunkering operations							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>All operations are carried out in accordance with MARPOL and due regard paid to the Shipboard Oil Pollution Emergency Plan (50PEP)</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of locating the vessel's ballast water management plan and its content		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of observing and understudying the engineer officer conducting a ballasting operation		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of requirements of the MARPOL Convention and its Annexes		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the operation of Oil Discharge Monitor Equipment (oil tankers)		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of the records required to be entered in the Oil Record Book		<input type="checkbox"/>		

Competence: 12. Maintain seaworthiness of the ship						Competence Demonstrated Training Officer (Sign/date)	
12.1 – Inspecting hull and hull openings, compartments, hatch covers equipment, and take action where defects are detected							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The inspection is properly carried out, due regard paid to the prevailing circumstances and areas where defects are most likely to occur. Any defect is immediately reported and recorded and the suggested or executed action adequate for the situation</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of the precautions required for entry into enclosed spaces		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the precautions required for working at height		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of the precautions required for power tools use		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the precautions required for manual Lifting and carrying		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of opening, closing, and securing of hatches when appropriate		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of maintaining watertight doors, ports, and hatches		<input type="checkbox"/>		

Competence: 12. Maintain seaworthiness of the ship						Competence Demonstrated Training Officer (Sign/date)	
12.1 – (Continue) Inspecting hull and hull openings, compartments, hatch covers equipment, and take action where defects are detected							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The inspection is properly carried out, due regard paid to the prevailing circumstances and areas where defects are most likely to occur. Any defect is immediately reported and recorded and the suggested or executed action adequate for the situation</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of carrying out routine repairs and maintenance on anchor windlasses		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of carrying out routine repairs and maintenance on cargo handling equipment		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of carrying out routine repairs and maintenance on mooring winches		<input type="checkbox"/>		
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of carrying out full inventory check of engine stores		<input type="checkbox"/>		
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of preparing steel plates and other surfaces for protective coating		<input type="checkbox"/>		
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of applying protective coatings on appropriate surfaces		<input type="checkbox"/>		

Competence: 12. Maintain seaworthiness of the ship						Competence Demonstrated Training Officer (Sign/date)	
12.2 – Avoid damages by ensuring that all loose objects are securely fastened							
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>	
	Sign	Date		<i>Heavy or otherwise unsafe items shall be given top priority and proper seamanship shall be practiced.</i> <i>The inspection shall be carried out at routine intervals and more often in harsh weather situations or in the case of certain accidents.</i>		Sign	Date
				<u>Improvement Recommendation</u>			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of ensuring that all gear, tools, spares etc. are properly secured and stowed		<input type="checkbox"/>		
12.3 - Arranging for regular control measures to ensure watertight integrity				<i>Regularly sounded peaks, bilges, tanks and other compartments, the results recorded and any irregularities reported and examined further</i>	<input type="checkbox"/>		
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of taking and recording the daily soundings of engine room tanks, bilges, and other spaces by manual means		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of taking, and recording the daily soundings of engine room tanks, bilges, and other spaces by using gauges		<input type="checkbox"/>		

Competence: 13. Prevent, control and fight fires on board							Competence Demonstrated Training Officer (Sign/date)	
13.1 – Operating fire and smoke detecting equipment								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>The equipment shall be checked and operated routinely and in compliance with manufacturer's manuals and vessel specific instructions</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of the usage and maintenance of portable foam extinguishers		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the usage and maintenance of portable dry powder extinguishers		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of the usage and maintenance of portable CO2 extinguisher		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the usage and maintenance of portable water extinguishers		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of determining the correct type of extinguisher for different types of fires		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of the usage and maintenance and repair of hoses, nozzles, and couplings		<input type="checkbox"/>			

Competence: 13. Prevent, control and fight fires on board						Competence Demonstrated Training Officer (Sign/date)	
13.1 – (Continue) Operating fire and smoke detecting equipment							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The equipment shall be checked and operated routinely and in compliance with manufacturer's manuals and vessel specific instructions</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of the proper use of fire hoses and hydrants		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of how to start the Emergency Fire Pump, and its location		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of the reasons for the provision of 'International Shore Coupling' and its location		<input type="checkbox"/>		
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of the significance and contents of the "Fire Control Plan" and its location		<input type="checkbox"/>		
<input type="checkbox"/>			11. Demonstrate knowledge, understanding and ability to refill and maintain CO2 portable extinguishers		<input type="checkbox"/>		
<input type="checkbox"/>			12. Demonstrate knowledge, understanding and ability to refill and maintain Foam portable extinguishers		<input type="checkbox"/>		

Competence: 13. Prevent, control and fight fires on board						Competence Demonstrated Training Officer (Sign/date)	
13.1 – (Continue) Operating fire and smoke detecting equipment							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The equipment shall be checked and operated routinely and in compliance with manufacturer's manuals and vessel specific instructions</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			13. Demonstrate knowledge, understanding and ability to refill and maintain DCP portable extinguishers		<input type="checkbox"/>		
<input type="checkbox"/>			14. Demonstrate knowledge, understanding and ability to refill and maintain Water-Type portable extinguishers		<input type="checkbox"/>		
<input type="checkbox"/>			15. Demonstrate knowledge and understanding of the requirements for testing of portable CO2 extinguishers ashore		<input type="checkbox"/>		
<input type="checkbox"/>			16. Demonstrate knowledge and understanding of the requirements for testing of portable foam compound extinguishers ashore		<input type="checkbox"/>		
<input type="checkbox"/>			17. Demonstrate knowledge and understanding of the requirements for testing of portable fixed CO2 extinguishers ashore		<input type="checkbox"/>		
<input type="checkbox"/>			18. Demonstrate knowledge and understanding of the requirements for testing of portable extinguishing system bottles ashore		<input type="checkbox"/>		

Competence: 13. Prevent, control and fight fires on board						Competence Demonstrated Training Officer (Sign/date)	
13.2 – Ensuring that all persons on watch are able to detect and correct hazardous situations, and keep the vessel clean and tidy							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>inspections in areas at risk from possible fires are supervised by Personnel on watch. Ensure readily combustible materials are stored safely and the watch demonstrate an attitude of alertness to fire prevention</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of performing fire patrol duties		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of re-stowing and securing gear post maintenance work		<input type="checkbox"/>		
13.3 - Instructing the watch in locating fire-fighting appliances, and emergency escape routes, and sound alarm				<i>Instruct watch officers on portable or other fire extinguishers. Demonstrate an ability to raise the alarm</i>	<input type="checkbox"/>		
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of full inspection of fire-fighting equipment and reporting to the Chief Engineer		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of having participated in emergency response fire drills at sea and in port		<input type="checkbox"/>		

Competence: 13. Prevent, control and fight fires on board						Competence Demonstrated Training Officer (Sign/date)	
13.4 – Identify location of fire stations, and demonstrate proper use of fixed installations and other fire-fighting appliances and agents							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>All stations must be located, chose the most effective in the case of a fire. Chose proper equipment and extinguishing agents for different fire-fighting appliances</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of testing the fire detection and alarm systems were fitted		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of testing the fire alarms were fitted		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of testing the fixed steam systems were fitted		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of testing the fixed automatic sprinklers were fitted		<input type="checkbox"/>		
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of testing the fixed CO2 systems where fitted		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of testing the fixed foam extinguishers where fitted		<input type="checkbox"/>		

Competence: 13. Prevent, control and fight fires on board						Competence Demonstrated Training Officer (Sign/date)	
13.4 – (Continue) Identify location of fire stations, and demonstrate proper use of fixed installations and other fire-fighting appliances and agents							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>All stations must be located, chose the most effective in the case of a fire. Chose proper equipment and extinguishing agents for different fire-fighting appliances</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of testing the automatic and manual fire doors where fitted		<input type="checkbox"/>		
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of testing the fire flaps and dampers where fitted		<input type="checkbox"/>		
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of testing the emergency shut off valves, pump stops, and main engine stops where fitted		<input type="checkbox"/>		
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of the operation of the engine room fixed fire extinguishing system		<input type="checkbox"/>		
<input type="checkbox"/>			13. Demonstrate knowledge and understanding of the safety precautions required prior to operating the system		<input type="checkbox"/>		

Competence: 13. Prevent, control and fight fires on board						Competence Demonstrated Training Officer (Sign/date)	
13.5 – Fire protective equipment: Locate and use (fire fighting’s outfit, including breathing apparatus)							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The equipment is quickly donned and used in such a way that no accidents are likely to occur</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of the procedures and precautions required for entry into an enclosed space		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the different uses for a Self-Contained Breathing Apparatus (SCBA) set and an Emergency Escape Breathing Device		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of donning and use of SCBA sets		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of donning and use of a fire-fighter's outfit		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of donning and use of a fire-fighter's outfit with a SCBA set		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of the use of a SCBA record/control board		<input type="checkbox"/>		

Competence: 13. Prevent, control and fight fires on board						Competence Demonstrated Training Officer (Sign/date)	
13.6 – Illustrate ability to act in accordance with the firefighting plan during fire drills							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>After an exercise or a real fire extinguishing incident and during debriefing, the reasons for each action taken, including the priority in which they were taken, are explained and accepted as the most appropriate.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of taking charge of a fire party during a drill		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the use and location of all engine room safety appliances		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of all engine room escape routes		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of participation in a fire drill		<input type="checkbox"/>		

Competence: 14. Operate Life-saving appliances						Competence Demonstrated Training Officer (Sign/date)	
14.1 – Organize drills for abandon ship							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>When the alarm is sounded all persons meet at the designated lifeboat station wearing safety belts or immersion suits and carry out their duties on request.</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of the hazards to seafarers when manning lifeboats during drills and exercises		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the need to be familiar with the operation of on-load release mechanisms		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding that fall prevention devices (FPDs), where fitted, should be used in drills (to prevent unforeseen detachment)		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the need for meticulous inspection and maintenance of on-load release mechanisms		<input type="checkbox"/>		
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of the permanent markings on survival craft regarding the number of occupants		<input type="checkbox"/>		
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of locating and testing the Radio devices including satellite EPIRBs and SARTs operation		<input type="checkbox"/>		

Competence: 14. Operate Life-saving appliances						Competence Demonstrated Training Officer (Sign/date)	
14.1 – (Continue) Organize drills for abandon the ship							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>When the alarm is sounded all persons meet at the designated lifeboat station wearing safety belts or immersion suits and carry out their duties on request</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of locating and testing the Pyrotechnic distress signals operation		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of precautions for disposal of out-of-date pyrotechnics		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of having understudied an officer in charge during abandon ship drills		<input type="checkbox"/>		
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of donning firefighting suits and movement in confined space with simulated fire		<input type="checkbox"/>		
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of the “fireman’s lift and carry”		<input type="checkbox"/>		
<input type="checkbox"/>			12. Demonstrate knowledge and understanding of the use of Emergency Escape Breathing Device (EEBD)		<input type="checkbox"/>		

Competence: 14. Operate Life-saving appliances						Competence Demonstrated Training Officer (Sign/date)	
14.2 – lifeboat Launching, handling, and recovering							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>The boat is safely handled under motor or oars, as appropriate. Correct orders for embarkation, launching and immediately clearing the ship's side is given. The boat is safely recovered and ready</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of the preparation and swinging out of lifeboats and be aware of potential risks		<input type="checkbox"/>		
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the preparation and boarding of free-fall lifeboat and be aware of potential risks		<input type="checkbox"/>		
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of lowering a lifeboat to clear the ship and ride to a sea anchor		<input type="checkbox"/>		
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of starting and operating a lifeboat engine		<input type="checkbox"/>		
<input type="checkbox"/>			5. Crew a boat under: <input type="checkbox"/> Oars <input type="checkbox"/> Power		<input type="checkbox"/>		
<input type="checkbox"/>			6. Cox a boat under: <input type="checkbox"/> Oars <input type="checkbox"/> Power		<input type="checkbox"/>		
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of repairing and securing of a lifeboat		<input type="checkbox"/>		
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of recovering and securing a free fall lifeboat		<input type="checkbox"/>		

Competence: 14. Operate Life-saving appliances							Competence Demonstrated Training Officer (Sign/date)	
14.3 – Throw or Launch overboard a life raft, and maneuver it clear of vessel’s side								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>The role of the assigned person is clearly allocated, orders efficiently executed, the raft is quickly righted if inverted, and all persons boarded before the raft moves away from the ship</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding, if the opportunity had arisen, of the procedure for launching and inflating life rafts		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the use and principle of hydrostatic release mechanisms and the weak link		<input type="checkbox"/>			
14.4 – Operating radio life-saving appliances				<i>Contact by radio is operated without alerting anybody by transmitting false signals</i>	<input type="checkbox"/>			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of rigging and operating the portable lifeboat radio under supervision		<input type="checkbox"/>			

Competence: 14. Operate Life-saving appliances							Competence Demonstrated Training Officer (Sign/date)	
14.5 – All required equipment on board a rescue craft is functioning and maintained as specified in the SOLAS Training Manual								
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer		
	Sign	Date		<i>Proper use of pyrotechnics, food, water and signaling equipment is satisfactorily demonstrated</i>		Sign	Date	
				Improvement Recommendation				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of statutory equipment required in survival craft and their correct use		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the minimum food and water requirements for occupants of survival craft		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of locating and understanding operation of pyrotechnics including precautions for their disposal		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the operation of rocket line throwing apparatus		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of the operation of distress rockets, flares, and other pyrotechnics		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of the maintenance of lifeboats and rescue boats		<input type="checkbox"/>			
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of the maintenance of lifeboat equipment and provisions		<input type="checkbox"/>			

Competence: 14. Operate Life-saving appliances						Competence Demonstrated Training Officer (Sign/date)	
14.5 – (Continue) All required equipment on board a rescue craft is functioning and maintained as specified in the SOLAS Training Manual							
Completion of Task	Training Officer		Task/Duty	Assessment Requirements	Completion of Task	Training Officer	
	Sign	Date		<i>Proper use of pyrotechnics, food, water and signaling equipment is satisfactorily demonstrated</i>		Sign	Date
				Improvement Recommendation			
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of the maintenance of launching davits and gear		<input type="checkbox"/>		
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of the maintenance of Buoyant apparatus, e.g., lifebuoys, lifejackets and attachments		<input type="checkbox"/>		
<input type="checkbox"/>			10. Demonstrate knowledge and understanding of the maintenance of immersion suits and thermal protective aids		<input type="checkbox"/>		
<input type="checkbox"/>			11. Demonstrate knowledge and understanding of the maintenance of other survival craft, specify type <ul style="list-style-type: none"> • • • 		<input type="checkbox"/>		
<input checked="" type="checkbox"/>			12. Demonstrate knowledge and understanding of the routine maintenance of a lifeboat engine		<input type="checkbox"/>		

Competence: 15. Apply medical first aid on board ship							Competence Demonstrated Training Officer (Sign/date)	
15.1 – Stopping excessive bleeding, ensure breathing and put casualties in proper position								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>The demonstrated actions are in compliance with accepted recommendations given in international medical first aid guidance</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of an emergency first -aid drill at sea		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of first-aid principles for stopping bleeding		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of first-aid principles to treat suffocating and drowning		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of first-aid principles for placing a casualty in the recovery position		<input type="checkbox"/>			
15.2 - Detect signs of shock and heat and act accordingly				<i>The treatment recommended or given is adequate. Ability to request Radio Medico for advice is demonstrated</i>	<input type="checkbox"/>			
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of how to handle a casualty in shock		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of procedures for dealing with heat stroke		<input type="checkbox"/>			

Competence: 15. Apply medical first aid on board ship							Competence Demonstrated Training Officer (Sign/date)	
15.3 – Treat burns, hypothermia, and scald fractures								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Recommended guidelines for effective action are explained. Principles for the avoidance of hypothermia are illustrated</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of treatment procedure on an electric shock casualty		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of the treatment procedure for burns		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of treatment procedure for minor fractures		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the procedure of avoiding hypothermia		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of the procedure for treating hypothermia casualty		<input type="checkbox"/>			

Competence: 16. Monitor compliance with legislative requirements							Competence Demonstrated Training Officer (Sign/date)	
16.1 – Stating where laws, rules, and regulations concerning vessel operation and pollution prevention are available								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>The statement given is correct and includes relevant bodies or organizations which may be contacted to obtain special information or guidance which is not easily accessible</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of locating copies of the SOLAS Convention on board		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of locating copies of the MARPOL Convention on board		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of locating copies of SOPEP (Shipboard Oil Pollution Emergency Plan) on board		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of locating copies of the Garbage Record Book on board		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of locating copies of certificates issued under SOLAS, MARPOL, Load Line, STCW Conventions, MLC 2006, and other regulations		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of the function and purpose of a “Classification Society”		<input type="checkbox"/>			

Competence: 16. Monitor compliance with legislative requirements							Competence Demonstrated Training Officer (Sign/date)	
16.2 – Use legislation to check on board operations comply with international regulations								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Correct response is established within an acceptable period of time and consequential actions executed</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of engine room oil and oily waste handling operations in compliance with MARPOL		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of ensuring that garbage disposal is in accordance with MARPOL and ship's Garbage Management Plan		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of the inspection of machinery and equipment prior to surveys		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of shipboard inspections prior to an International Oil Pollution Prevention (IOPP) survey		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of the function and purpose of the International Safety Guide for Oil Tankers and Terminals "ISGOTT"		<input type="checkbox"/>			
<input type="checkbox"/>			6. Demonstrate knowledge and understanding of the purpose of an OCIMF "SIRE" inspection conducted onboard the vessel		<input type="checkbox"/>			

Competence: 16. Monitor compliance with legislative requirements							Competence Demonstrated Training Officer (Sign/date)	
16.2 – (Continue) Use legislation to check on board operations comply with international regulations								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>Correct response is established within an acceptable period of time and consequential actions executed</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			7. Demonstrate knowledge and understanding of the function and purpose of the Society of International Gas Tanker and Terminal Operators "SIGTTO"		<input type="checkbox"/>			
<input type="checkbox"/>			8. Demonstrate knowledge and understanding of the function and purpose of the "Code of Safe Work Practices" and its contents		<input type="checkbox"/>			
<input type="checkbox"/>			9. Demonstrate knowledge and understanding of the hours of rest requirements as stipulated by the STCW Convention		<input type="checkbox"/>			

Competence: 16. Monitor compliance with legislative requirements							Competence Demonstrated Training Officer (Sign/date)	
16.3 – Stowaways searching								
Completion of Task	<u>Training Officer</u>		Task/Duty	<u>Assessment Requirements</u>	Completion of Task	<u>Training Officer</u>		
	Sign	Date		<i>A comprehensive and thorough search is conducted and findings reported to the responsible officer</i>		Sign	Date	
				<u>Improvement Recommendation</u>				
<input type="checkbox"/>			1. Demonstrate knowledge and understanding of carrying out a stowaway search		<input type="checkbox"/>			
<input type="checkbox"/>			2. Demonstrate knowledge and understanding of anti-piracy watch keeping procedures at sea, anchor and in port		<input type="checkbox"/>			
<input type="checkbox"/>			3. Demonstrate knowledge and understanding of the International Ship and Port Security procedures for visitors on ship		<input type="checkbox"/>			
<input type="checkbox"/>			4. Demonstrate knowledge and understanding of the three security levels and their implications on ships and in port		<input type="checkbox"/>			
<input type="checkbox"/>			5. Demonstrate knowledge and understanding of the requirements for Ship Security Alert System (SSAS)		<input type="checkbox"/>			

SECTION 8 PROJECT WORK

INTRODUCTION

The goal of conducting assignments during sea service is to ensure that a cadet gradually acquires awareness of the ships they would operate and the equipment and life-saving devices on board.

Intelligent observation, initiative and, reference where necessary to ship's plans and other details, in addition to the manufacturer's operation instructions and manuals, will be required to achieve this desired objective effectively. In addition, in a variety of situations, it will be important to seek the support, guidance and advice of the officers to obtain the necessary information.

Most of the projects are concerned with obtaining accurate information concerning such issues as the structural features and devices of the ship, as well as the various supply systems-bunker fuel, fresh water, and salt water, etc.

The technical precision of each project will be reviewed by the Chief Engineer of the ship and assessed by your company and/or your Nautical College. The assessment process will take the following into consideration.

- (a) Precision of information/details validity in written text, descriptions, or calculations;
- (b) Topic analysis showing the breadth of the study and the clear presentation of the facts;
- (c) Neatness of writing, diagrams / labels; and
- (d) Spelling and grammar.

INSTRUCTIONS

1. Before commencing each project determine the type of information required, i.e., written with a full description and demonstration of understanding.
2. Begin each project on a separate page and state the Name of Ship, Project Title, Date Commenced and Date Completed.
3. If not using a computer, use pens for written text and calculations and pencils for illustrations, which are to be drawn roughly to scale. Colors should be used whenever possible.
4. Your project work should be handed to the Chief Engineer for inspection at the same time as you present this Training Record Book.
5. Completed project work should be submitted either to the company or to your college. You will be advised accordingly.

1. Pipe Systems

1. Trace and make line diagrams of the following pipe systems. Main sea water
2. Bilge, including OWS and emergency bilge pumping arrangements
3. Fire main
4. Ballast
5. Domestic fresh water (high temperature, low temperature)
6. Fuel-transfer system, (HFO and MDO), including remote or emergency controls and overflow arrangements for fuel transfer
7. Main steam
8. Feedwater
9. Auxiliary steam
10. Main engine fuel oil system
11. Auxiliary engine fuel oil system
12. Main engine lubricating oil system
13. Sewage system
14. Compressed air systems for engine room and deck services
15. Domestic refrigeration system

Use the correct symbols to show on the appropriate diagrams:

- Valves (Non-Return, Screw Down Non-Return, etc.), remote or emergency controls and other arrangements
- Identify pressure relief valves, bursting discs, drains, air cocks, filter units, sounding arrangements and vent pipes

2. Scale Drawings

Draw approximately to scale:

- A longitudinal section through the center line of your ship showing and naming cargo holds/tanks, bunker, ballast, forepeak, aft peak, slop tanks, ROT tanks, and all other compartments/spaces;
- A plan of each of the decks, showing and naming accommodation, storerooms, firefighting equipment, etc.; and
- A plan of all firefighting equipment including piping arrangements on Deck and Engine room

3. Safety

On the plan of machinery spaces drawn above:

- Show the location by key letters of each type of life-saving appliance and firefighting equipment; and
- List the above key letters used in (a) and alongside each one, give a brief description of each item.

4. Protection of the Marine Environment

Summarize the company's policy on environmental protection. What measures are taken aboard your ship to minimize the risk of pollution. This includes the disposal of plastics, galley waste, noise, smoke, oil, sludge, sewage, grey water etc. Investigate and list the MARPOL regulations that aim to control and protect the marine environment.

5. Main Engine

Make a line diagram of the lubricating system for the main engine. Indicate the types of valves, pumps and filters fitted. Show, with the aid of a diagram, the general lube oil distribution.

What is the average lube oil consumption of cylinder and crankcase oil? Why does this loss occur?

6. Steering Gear

Describe the normal and emergency operation of the steering gear.

7. Electrical Systems

Describe the procedure for paralleling the ship's alternators or generators. Explain how load sharing is achieved.

8. Bunkering

Describe the procedures for taking bunkers. State clearly the sequence of events and the precautions taken. Evaluate the results of any tests of oil samples taken during the bunkering operation or from analysis made by a laboratory ashore.

9. Bridge Watches

Describe very briefly the purpose and functions of the main items of bridge equipment. Observe procedures and assist on the bridge during maneuvering during the following operations:

- (a) Entering port;
- (b) Leaving port;
- (c) When anchoring or weighing anchor; and
- (d) During one watch at sea.

Describe how orders are given, confirmed, and executed and the interactions with the engine room and other parts of the vessel

SECTION 9 TASK SUMMARY CHART

OFFICERS IN CHARGE OF AN ENGINEERING WATCH

The purpose of the summary chart is to provide the cadet, the company and the ship's officers with a reference tool to keep a continuous check of the number of tasks or duties stated in Section 7 that have been completed, and those that are outstanding.

In the charts below, the tinted boxes simply indicate the start of a new group of tasks or duties.

Only tick off the tasks that you have done.

FUNCTION - Marine Engineering at the Operational Level

1. COMPETENCE – Maintain a safe engineering watch

1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	1.2.1	1.2.2	1.2.3	1.2.4	1.2.5	1.2.6
1.2.7	1.2.8	1.2.9	1.2.10	1.2.11	1.2.12	1.2.13	1.2.14	1.2.15	1.2.16	1.2.17	1.2.18
1.2.19	1.2.20	1.2.21	1.2.22	1.2.23	1.2.24	1.2.25	1.2.26	1.2.27	1.3.1	1.3.2	1.3.3
1.3.4	1.3.5	1.3.6	1.3.7	1.3.8	1.3.9	1.3.10	1.3.11	1.4.1	1.4.2	1.4.3	1.4.4
1.4.5	1.5.1	1.5.2	1.5.3	1.5.4	1.5.5	1.5.6	1.5.7	1.5.8	1.6.1	1.6.2	1.6.3
1.6.4	1.6.5	1.6.6									

2. COMPETENCE - Use English in written and oral form

2.1.1	2.1.2	2.1.3	2.2.1	2.2.2	2.2.3	2.2.4	2.2.5

3. COMPETENCE - Use internal communication systems

3.1.1	3.1.2	3.1.3	3.1.4	3.1.5	3.1.6

4. COMPETENCE - Operate main and auxiliary machinery and associated control systems

4.1.1	4.1.2	4.1.3	4.1.4	4.1.5	4.1.6	4.1.7	4.2.1	4.2.2	4.2.3	4.2.4	4.2.5
4.2.6	4.2.7	4.2.8	4.2.9	4.2.10	4.2.11	4.2.12	4.2.13	4.2.14	4.2.15	4.2.16	4.2.17
4.2.18	4.2.19	4.2.20	4.2.21	4.2.22	4.2.23	4.2.24	4.2.25	4.2.26	4.2.27	4.2.28	4.2.29
4.2.30	4.2.31	4.2.32	4.2.33	4.2.34	4.2.35	4.2.36	4.2.37	4.2.38	4.2.39	4.2.40	4.2.41
4.2.42	4.2.43	4.2.44	4.2.45	4.2.46	4.2.47	4.2.48	4.2.49	4.2.50	4.2.51	4.2.52	4.2.53
4.2.54	4.2.55	4.2.56	4.2.57	4.2.58	4.2.59	4.2.60	4.2.61	4.2.62	4.2.63	4.2.64	4.2.65
4.2.66	4.2.66	4.2.67	4.2.68	4.2.69	4.2.70	4.2.71	4.2.72	4.2.73	4.2.74	4.2.75	4.2.76
4.2.77	4.2.78	4.2.79	4.2.80	4.2.81	4.2.82	4.2.83	4.2.84	4.2.85	4.2.86	4.2.87	4.2.88
4.2.89	4.2.90	4.2.91	4.2.92	4.2.93	4.2.94	4.2.95	4.2.96	4.2.97	4.2.98	4.2.99	4.2.100
4.2.101	4.2.102										

5. COMPETENCE - Operate fuel. lubrication. ballast and other pumping systems and associated control systems

5.1.1	5.1.2	5.1.3	5.1.4	5.1.5	5.1.6	5.1.7	5.1.8	5.1.9	5.1.10	5.1.11	5.1.12
5.1.13	5.1.14	5.1.15	5.1.16	5.1.17	5.1.18	5.1.19	5.1.20	5.1.21	5.1.22	5.1.23	5.1.24
5.1.25	5.2.1	5.2.2	5.2.3	5.2.4	5.2.5	5.2.6	5.2.7	5.2.8	5.2.9	5.2.10	5.2.11
5.2.12	5.2.13	5.2.14	5.2.15	5.2.16	5.2.17						

FUNCTION - Electrical. Electronic and Control Engineering at the Operational Level

6. COMPETENCE - Operate electrical. electronic and control systems

6.1.1	6.1.2	6.1.3	6.1.4	6.1.5	6.1.6	6.2.1	6.2.2	6.2.3	6.2.4	6.2.5	6.2.6
6.2.7	6.2.8	6.2.9	6.3.1	6.3.2	6.3.3	6.3.4	6.4.1	6.4.2	6.4.3	6.4.4	6.5.1
6.5.2	6.5.3	6.5.4	6.6.1	6.6.2	6.6.3	6.6.4	6.6.5	6.7.1	6.7.2	6.7.3	6.7.4
6.8.1	6.8.2	6.8.3	6.8.4	6.8.5	6.8.6	6.8.7	6.8.8	6.8.9	6.9.1	6.9.2	

7. COMPETENCE" Maintenance and repair of electrical and electronic equipment

7.1.1	7.2.1	7.2.2	7.2.3	7.2.4	7.2.5	7.3.1	7.3.2	7.3.2	7.3.3	7.3.4	7.3.5
7.3.6	7.3.7	7.3.8	7.3.9	7.3.10	7.4.1	7.4.2	7.4.3	7.4.4	7.4.5	7.4.6	7.4.7
7.4.8	7.4.9	7.4.10	7.4.11	7.4.12	7.4.13	7.4.14	7.4.15	7.4.16	7.4.17	7.4.18	7.4.19
7.4.20	7.4.21	7.4.22	7.4.23	7.4.24	7.4.25	7.4.26	7.4.27	7.4.28	7.4.29	7.4.30	7.4.31
7.4.32	7.5.1	7.5.2	7.5.3	7.5.4	7.6.1	7.6.2	7.6.3	7.7.1	7.7.2	7.7.3	7.7.4
7.7.5	7.7.6	7.7.7	7.8.1	7.8.2	7.8.3	7.8.4	7.8.5	7.8.6	7.8.7	7.8.8	7.8.9
7.8.10	7.8.11	7.8.12	7.8.13	7.8.14	7.8.15						

FUNCTION - Maintenance and Repair at the Operational Level

8. COMPETENCE - Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board

8.1.1	8.1.2	8.1.3	8.1.4	8.1.5	8.1.6	8.2.1	8.2.2	8.2.3	8.2.4	8.2.5	8.2.6
8.3.1	8.3.2	8.4.1	8.4.2	8.4.3	8.4.4	8.4.5	8.4.6	8.4.7	8.4.8	8.4.9	8.4.10
8.4.11	8.5.1	8.5.2	8.5.3	8.5.4	8.5.5	8.5.6	8.5.7	8.5.8	8.5.9	8.5.10	8.5.11
8.5.12	8.5.13	8.5.14	8.5.15	8.5.16	8.5.17	8.5.18	8.5.19	8.5.20	8.5.21	8.5.22	8.5.23
8.5.24	8.6.1	8.6.2	8.6.3	8.6.4	8.6.5	8.6.6	8.6.7	8.6.8	8.6.9	8.6.10	8.6.11
8.6.12	8.7.1	8.7.2	8.7.3	8.7.4	8.7.5	8.7.6	8.7.7	8.7.8	8.7.9	8.7.10	8.8.1
8.8.2	8.8.3	8.8.4	8.8.5	8.8.6	8.8.7	8.8.8	8.8.9	8.8.10	8.8.11	8.8.12	8.8.13
8.8.14	8.8.15	8.9.1	8.9.2	8.9.3	8.9.4	8.9.5	8.9.6	8.9.7	8.9.8	8.9.9	8.9.10
8.9.11	8.9.12	8.9.13	8.9.14	8.9.15							

9. COMPETENCE - Maintenance and repair of shipboard machinery and equipment

9.1.1	9.1.2	9.1.3	9.1.4	9.1.5	9.1.6	9.1.7	9.1.8	9.1.9	9.2.1	9.2.2	9.2.3
9.2.4	9.2.5	9.2.6	9.2.7	9.2.8	9.2.9	9.2.10	9.2.11	9.2.12	9.2.13	9.2.14	9.2.15
9.2.16	9.2.17	9.2.18	9.2.19	9.2.20	9.2.21	9.2.22	9.2.23	9.2.24	9.2.25	9.2.26	9.2.27
9.2.28	9.3.1	9.3.2	9.3.3	9.3.4	9.3.5	9.3.6	9.3.7	9.3.8	9.3.9	9.3.10	9.3.11
9.3.12	9.3.13	9.3.14	9.3.15	9.3.16	9.3.17	9.3.18	9.3.19	9.3.20	9.3.21	9.3.22	9.3.23
9.3.24	9.3.25	9.3.26	9.3.27	9.3.28	9.4.1	9.4.2	9.4.3	9.4.4	9.4.5	9.4.6	9.4.7
9.4.8	9.4.9	9.4.10	9.4.11	9.4.12	9.4.13	9.4.14	9.4.15	9.4.16	9.4.17	9.4.18	9.4.19
9.4.20	9.4.21	9.4.22	9.5.1	9.5.2	9.5.3	9.5.4	9.5.5	9.5.6	9.5.7	9.5.8	9.5.9
9.5.10	9.5.11	9.6.1	9.6.2	9.6.3	9.6.4	9.6.5	9.6.6	9.6.7	9.6.8	9.6.9	9.6.10
9.6.11	9.6.12	9.6.13	9.6.14	9.6.15	9.6.16	9.6.17	9.6.18	9.6.19	9.6.20	9.6.21	9.6.22
9.6.23	9.6.24	9.7.1	9.7.2	9.7.3	9.7.4	9.7.5	9.7.6	9.7.7	9.7.8	9.7.9	

FUNCTION - Controlling the Operation of the Ship and Care for Persons On Board at the Operational Level

10. COMPETENCE - Application of leadership and teamworking skills

10.1.1	10.1.2	10.1.3	10.1.4	10.1.5	10.1.6	10.1.7	10.2.1	10.2.2	10.2.3	10.2.4	10.2.5

11. COMPETENCE - Ensure compliance with pollution prevention requirements

11.1.1	11.1.2	11.1.3	11.1.4	11.1.5	11.1.6	11.1.7	11.1.8	11.1.9	11.1.10	11.1.11	11.1.12
11.1.13	11.1.14	11.1.15	11.1.16	11.1.17	11.1.18	11.1.19	11.1.20	11.1.21	11.1.22	11.1.23	11.2.1
11.2.2	11.2.3	11.2.4	11.3.1	11.3.2	11.4.1	11.4.2	11.5.1	11.5.2	11.6.1	11.6.2	11.6.3
11.6.4	11.6.5										

12. COMPETENCE - Maintain seaworthiness of the ship

12.1.1	12.1.2	12.1.3	12.1.4	12.1.5	12.1.6	12.1.7	12.1.8	12.1.9	12.1.10	12.1.11	12.1.12
12.2.1	12.3.1	12.3.2									

13. COMPETENCE - Prevent, control and fight fires on board

13.1.1	13.1.2	13.1.3	13.1.4	13.1.5	13.1.6	13.1.7	13.1.8	13.1.9	13.1.10	13.1.11	13.1.12
13.1.13	13.1.14	13.1.15	13.1.16	13.1.17	13.1.18	13.2.1	13.2.2	13.3.1	13.3.2	13.4.1	13.4.2
13.4.3	13.4.4	13.4.5	13.4.6	13.4.7	13.4.8	13.4.9	13.4.10	13.4.11	13.5.1	13.5.2	13.5.3
13.5.4	13.5.5	13.5.6	13.6.1	13.6.2	13.6.3	13.6.4					

14. COMPETENCE - Operate life-saving appliances

14.1.1	14.1.2	14.1.3	14.1.4	14.1.5	14.1.6	14.1.7	14.1.8	14.1.9	14.1.10	14.1.11	14.1.12
14.2.1	14.2.2	14.2.3	14.2.4	14.2.5	14.2.6	14.2.7	14.2.8	14.3.1	14.3.2	14.4.1	14.5.1
14.5.2	14.5.3	14.5.4	14.5.5	14.5.6	14.5.7	14.5.8	14.5.9	14.5.10	14.5.11	14.5.12	

15. COMPETENCE - Apply medical first aid on board ship

15.1.1	15.1.2	15.1.3	15.1.4	15.2.1	15.2.2	15.3.1	15.3.2	15.3.3	15.3.4	15.3.5

16. COMPETENCE - Monitor compliance with legislative requirements

16.1.1	16.1.2	16.1.3	16.1.4	16.1.5	16.1.6	16.2.1	16.2.2	16.2.3	16.2.4	16.2.5	16.2.6
16.2.7	16.2.8	16.2.9	16.3.1	16.3.2	16.3.3	16.3.4	16.3.5				