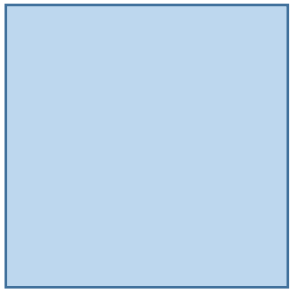
On Board Training Record Book
For Officers in Charge of an Engineering Watch (Engine cadets)



Particulars of Cadet:

Name, Surname: _____

Personal ID: _____

Seafarer's ID: _____ / Date of Birth: _____

Home Address: _____

_____

Phone No: _____ E-mail:_____

Particulars of Maritime University

Name of University: _____

Registration N of TRB _____

Date of registration _____

Stamp

Training Supervisor from Maritime University:

Name, Surname: _____Signature:_____

Phone No: _____ E-mail: _____

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Preamble

According to STCW Convention cadet's seagoing service shall be documented by relevant records in a training record book (TRB), which shall be approved by the maritime administration responsible for issuing Seafarers certificates of competence.

This Training Record Book is developed and approved by the Maritime Transport Agency of Georgia (MTA). It is created in accordance with the functions and standards of competence described in the standard A-III/1 of the STCW Code. The tasks included in the TRB cover all areas of knowledge and proficiency described in the standard mentioned above.

Engine Cadet is responsible for full and accurate records in all parts of this TRB. Completed TRB provides the documentary evidence that a cadet has successfully completed on board training programme and demonstrated adequate competence as required by the STCW Convention for the purpose of certification as an Officer on Watch on ships of 500 GT or more.

Abbreviations

Following abbreviations are used in this Training Record Book:

TRB – On board Training Record Book

MTA – Maritime Transport Agency of Georgia

METI – Maritime Educational and Training Institution

STCW Convention – International convention for Standards of Training, Certification and Watch keeping of Seafarers (as amended)

1 Part 1 – On Board Training requirements

1.1 Arrangement of On Board training

The STCW Convention lays great emphasis on practical competence. Therefore an important part of the STCW training programme is to put into the practice what the cadet has learned during educational process in the Maritime University. The best way is to practice them On Board the sea going ship under the supervision of a person with appropriate training and experience.

On-board, as part of an approved training programme, must be recorded in a training record book. The tasks assigned in this book should be completed by the Engine Cadet under the supervision of a training supervisor on board. This will normally be a designated officer. The training supervisor will inspect the progress made by the student and sign the book accordingly. Training record book should also be checked regularly by the Master. On completion of all the tasks the TRB is submitted to training supervisor in the Maritime University for review and finally to be presented to the Seafarers Department of Maritime Transport Agency. Completed records will be thoroughly inspected to demonstrate that the cadet has achieved the standards of competence in order to qualify for certification as Engine officer.

Training and assessment, both on-board and ashore, should always be conducted by the qualified persons/assessors. It is the responsibility of the METI to elaborate and approve the Training program, which should be in compliance with the national standards. METI also appoints a person responsible for the supervision of the cadets training program. Following **shall be done by the training supervisor**:

- Familiarize the cadet with the rules of the completion of the Book;
- Provide necessary support and guidance during the cadetship program for completion of the tasks;
- Monitor the cadets training progress and completion of the Tasks. Make an additional training task together with the On Board training officer if it is necessary depending on a ship's specific type, purpose or characteristics in order to achieve the best training objectives.
- At the end of training program, evaluate if the training tasks are fully and correctly completed by the cadet.

Cadet's On Board training can't be effectively completed without supervision of shipboard Management. Ship's Chief Engineer shall appoint the Engine Officer who is responsible for the practical training of the Cadet (Training Officer).

Master shall ensure, that upon arrival on board the Cadet completes the Mandatory Safety, Security and Shipboard Familiarization as well as instruction on Safe operations on board. Familiarization shall be done by the Safety Officer or by his deputy.

STCW convention doesn't allow the Master/company to assign the specific duties and functions to the cadet other than duties, which help him to complete the training tasks described by this TRB and cadet's training program.

Chief Engineer to provide the Cadet with sufficient time and shall grant an access to the necessary shipboard documentation for completion the Training Tasks.

Chief Engineer to ensure that cadet's training is successfully progressing under supervision of training officer and shall evaluate the completion of On Board Training, as well as cadet's knowledge and practical skills.

Training Officer shall familiarize himself with the purpose and content of the TRB taking into an account Guidance given and training objectives. If the vessel's specific type, function or characteristics require so, the training officer shall assign an additional training tasks to the Cadet. Training officer to establish the communication with the training supervisor from METI obtain necessary guidance and consultation as required.

Completion of training tasks shall be periodically reviewed by the Training officer. If the training progress found satisfactory and compliant to the training plan, the Training Officer shall confirm his approval by means of signing the relevant section of this TRB.

1.2 Procedures for completion, submission and evaluation of the Training Record Book

The TRB is elaborated and approved by the MTA. Before commencement of On Board training, the cadet may obtain the blank form of TRB form either on the web page of MTA or at Educational Institution at no expense to Cadet. TRB form shall be registered in the appropriate registry of Educational Institution. TRB shall be assigned unique number and shall be stamped by the main stamp of Educational Institution. Upon obtaining the book, the cadet shall familiarize himself with the purpose and content of the TRB Taking into an account the Tasks and Criteria for evaluation as well as Training outcomes laid out in a relevant Sections.

Upon joining the vessel, the Cadet should complete the information required in the relevant sections under supervision of Training Officer. The cadet is responsible for the correct record keeping of this TRB throughout the training program. Detailed records should be kept of the cadet's seagoing service including time spent in Engine Room during watch keeping duties.

Completion of TRB should be carried out in each occasion, when the cadet joins the Training vessel or any other type of merchant vessel during his/her cadetship program, until the 12 months On Board training period is achieved and training tasks given in this TRB are fully completed.

There is no necessity to complete the separate TRB for training occasions on different vessel.

The Book should be submitted to the Training officer and Chief Engineer for inspection every two weeks. Any comments or recommendations for improvement should be recorded. Comments should only relate to the cadet's competence and practical progress.

Upon completion of training program, the TRB to be inspected by the Training supervisor in the METI to verify the full and correct completion.

Completed TRB should be presented to the Seafarers Department of MTA as a documentary evidence of completion cadet's seagoing practice in order to obtain the Certificate of Competency of Officer in charge of a Engineering watch.

2 PART 2 – On Board service records

2.1 Cadet's signing on / signing off details

Ship's name	Type	IMO Number	Dates		Total period spent OB		Total Period spent in ECR	
			Sign on	Sign off	Months	Days	Months	Days
				Total Service:				

2.2 Ships Particulars

Ship's main particulars to be attached here.

3 PART 3 – Shipboard Review of OB service records

In order to assess the training progress, Records of TRB shall be monthly reviewed by the Master/Chief Engineer or designated Training officer and appropriate comments shall be inserted in the table below.

Ship's Name	Date of review	Reviewed by (Name, Surname)	Position Initials	Comments

4 PART 4 Summary of Training Records

4.1 Records of basic safety trainings

Training Description	Date completed	Name of Maritime Training Centre
Personal survival techniques		
Fire prevention and fire fighting		
Elementary first aid		
Personal safety and social responsibilities		

4.2 Record of other trainings

Training Description	Date completed	Name of Maritime Training Centre
Proficiency in Survival Craft and Rescue Boats		
Proficiency in Fast Rescue Boats		
Security Awareness Training		
Security training for Seafarers with Designated Security Duties		

5 PART 5 - Records of cadet's shipboard familiarization

5.1 Shipboard Safety Familiarization

STCW Code Section A-VI/1 Chapter VI (STCW 2010 Resolution 2)

MANDATORY MINIMUM REQUIREMENTS FOR SAFETY FAMILIARIZATION, BASIC TRAINING AND INSTRUCTION FOR ALL SEAFARERS

Before being assigned to shipboard duties, all persons employed or engaged on a seagoing ship, other than passengers, shall receive approved familiarization training in personal survival techniques or receive sufficient information and instruction, taking account of the guidance given in part B.

Responsible officer on each ship should sign below to confirm, that cadet has received training or instruction to be able to carry out the following tasks or duties.

Tasks **Cadet should be able to:**	**Ship's Name**					
Communicate with other persons on board on elementary safety matters, Understand safety information symbols, signs and alarm signals	☐	☐	☐	☐	☐	☐
Know what to do if: A person falls overboard Fire or smoke is detected The fire or abandon ship alarm is sounded	☐	☐	☐	☐	☐	☐
Identify muster and embarkation stations and emergency escape routes	☐	☐	☐	☐	☐	☐
locate and don life jackets and survival suits	☐	☐	☐	☐	☐	☐
raise the alarm and have a basic knowledge of the use of portable fire extinguishers	☐	☐	☐	☐	☐	☐
Take immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board	☐	☐	☐	☐	☐	☐

Close and open the fire, weathertight and watertight doors fitted in the particular ship, other than those for hull openings	☐	☐	☐	☐	☐	☐
Location of Emergency Muster Station:						
Date of Familiarization:						
Signature of responsible Officer:						

5.2 Shipboard Security Familiarization

Cadet should familiarize with the vessel's specific security details. Responsible officer on each ship should sign below to confirm, that cadet has received training or instruction to be able to carry out the following tasks or duties.

Tasks **Cadet should be able to:**	**Ship's Name**					
Know the ship's specific security alarm signal	☐	☐	☐	☐	☐	☐
Know the ship's specific security muster station	☐	☐	☐	☐	☐	☐
Know the procedures to follow the security threats	☐	☐	☐	☐	☐	☐
Understand security look out and reporting procedures	☐	☐	☐	☐	☐	☐
Know the location of the ship's citadel and mustering procedures	☐	☐	☐	☐	☐	☐
understand ships security hardening procedures	☐	☐	☐	☐	☐	☐
Take part in security-related training/drill	☐	☐	☐	☐	☐	☐
Date of Familiarization:						
Signature of responsible Officer:						

5.3 Shipboard Equipment Familiarization

As required by Regulation I/14 of the Convention.

Cadet should be familiarized with the duties and all ship arrangements, installations, equipment procedures and ship characteristics that are relevant to routine or emergency duties. Following table should be completed as soon as the cadet joins the ship.

Tasks **Cadet should be able to:**	**Ship's Name**					
Watch keeping procedures and arrangements: Have knowledge of engine room (ER) and other work areas	☐	☐	☐	☐	☐	☐
Have knowledge of main and auxiliary engines and other engine room equipment and displays	☐	☐	☐	☐	☐	☐
Safety and emergency procedures: Read and demonstrate an understanding of your Company's Fire and Safety Regulations	☐	☐	☐	☐	☐	☐
Locate engine room first aid equipment	☐	☐	☐	☐	☐	☐
Locate firefighting equipment: alarm activation points, alarm bells, extinguishers, hydrants, fire axes and hoses	☐	☐	☐	☐	☐	☐
Locate rocket line throwing apparatus	☐	☐	☐	☐	☐	☐
Locate distress rockets, flares and other pyrotechnics	☐	☐	☐	☐	☐	☐
Locate breathing apparatus and firefighter's outfits etc.	☐	☐	☐	☐	☐	☐
Locate EPIRB, SART and portable VHF radios	☐	☐	☐	☐	☐	☐
Locate Emergency Escape Breathing Devices (EEBDs) for machinery space and accommodation	☐	☐	☐	☐	☐	☐

Locate and understand the operation of the emergency deck stops for main engines, fire flaps, ventilation, fuel oil valve and other emergency stop valves.	☐	☐	☐	☐	☐	☐
Locate CO_2 bottle room, and control valves for smothering apparatus in machinery spaces, pump rooms, cargo tanks and holds	☐	☐	☐	☐	☐	☐
Locate and understand the operation of the emergency fire pump, emergency generator and emergency compressor	☐	☐	☐	☐	☐	☐
Environmental protection: Get acquainted with: The procedure for handling garbage, rubbish and other wastes	☐	☐	☐	☐	☐	☐
Handling of oily bilge water and oil wastes	☐	☐	☐	☐	☐	☐
Understand the operation of OWS (15ppm Equipment)	☐	☐	☐	☐	☐	☐
Understand the operation of Shipboard Incinerator	☐	☐	☐	☐	☐	☐
Date of Familiarization:						
Signature of responsible Officer:						

5.4 Engine Room Equipment & Deck Machinery Familiarization

Description of Engine Room Equipment:	Ship's Name					
Main Engine (Maker, type, rated power KW/Speed RPM	☐	☐	☐	☐	☐	☐
Auxiliary Engines (Maker, Type, rated power KW/Speed RPM)	☐	☐	☐	☐	☐	☐
Auxiliary Boiler (Maker, Type, technical Data,)	☐	☐	☐	☐	☐	☐
Exhaust Gas Boiler (Maker, Type, technical Data,)	☐	☐	☐	☐	☐	☐
Composite Boiler (Maker, Type, technical Data,) If applicable.	☐	☐	☐	☐	☐	☐
Steam Turbines for cargo & Ballast handling System (Maker, Type, technical Data,) If applicable.	☐	☐	☐	☐	☐	☐
Hydraulic Cargo Pumping System, FRAMO (Technical Data) If applicable.	☐	☐	☐	☐	☐	☐
Main Air compressor (Maker, Type, technical Data,)	☐	☐	☐	☐	☐	☐
Service Air Compressor (Maker, Type, technical Data,)	☐	☐	☐	☐	☐	☐
Main & Working Air Reservoir (type,Model,Capacity)	☐	☐	☐	☐	☐	☐
Control Air Dryer (Technical Data)	☐	☐	☐	☐	☐	☐
Purifiers (Maker, Type, technical Data,)	☐	☐	☐	☐	☐	☐
Fuel Oil Supply Unit	☐	☐	☐	☐	☐	☐

Fresh Water Generator (Maker, Type, technical Data,)						
Reverse Osmosis System (Maker, Type, technical Data,) If applicable:						
Fresh Water Hyd Unit (type, Model, Capacity)						
Domestic Water Sterilizer (Maker, Type, technical Data,)						
Rehardening Filter for drinking water. If applicable.						
Calorifier (Maker, Type, technical Data,)						
West Oil Incinerator (Maker, Type, technical Data,)						
Oily Water Separator/15 ppm Equipment (Maker, Type, technical Data,)						
Sewage treatment Plant (Maker, Type, technical Data,)						
Steering Gear (Maker, Type, technical Data,)						
Stern Tube (Maker, Type, technical Data,)						
Engine Room Overhead Crane (Technical Data)						
Tubular/plate type Heat Exchanger (technical Data)						
Exhaust Gas Scrubber/Sox Scrubber system (Maker, Type, technical Data,) If applicable						
Ballast Water Treatment System (Maker, Type, technical Data,) If Applicable						
Anti-Fouling System M.G.P.S./I.C.C. P (technical Data)						

Other Equipment (Specify)	☐	☐	☐	☐	☐	☐
Other Equipment (Specify)	☐	☐	☐	☐	☐	☐
Deck Machinery Familiarization:	☐	☐	☐	☐	☐	☐
Hose Handling Crane (Maker, Type, technical Data,)	☐	☐	☐	☐	☐	☐
Provision Crane (Maker, Type, technical Data,)	☐	☐	☐	☐	☐	☐
Mooring Winch/Windlass. (Maker, Type, technical Data,)	☐	☐	☐	☐	☐	☐
Other Equipment (Specify)	☐	☐	☐	☐	☐	☐
Other Equipment (Specify)	☐	☐	☐	☐	☐	☐
Date of Familiarization:						
Signature of responsible Officer:						

6 PART 6 Emergency Preparedness

6.1 Familiarization with OB trainings and Drills programme

The cadet has to familiarize himself with the vessel's OB trainings and drills programme, which is established by the operator company according to SOLAS convention and Vessel's Flag State requirements.

Vessel's Training and Drills programme to be attached here.

6.2 Familiarization with shipboard Emergency Alarm Signals

Responsible officer on each ship should sign below to confirm, that cadet has received training or instruction to be able to identify an emergency alarm signals.

Description of Alarm Signals	**Ship's Name**					
	Alarm Signal codes: (example: 7 short, 1 long)					
General Emergency alarm						
Fire alarm (If different from General Emergency alarm signal)						
Lifeboat Alarm (If different from General Emergency alarm signal)						
Man Over Board						
Security Alarm						
Other Alarm (specify)						
Other Alarm (specify)						
Date of Familiarization:						
Signature of responsible Officer:						

6.3 Familiarization with duties and responsibilities as per vessel's Muster List

Copy of Vessel's Muster List to be attached here.

7 PART 7 Safe Working Practices OB

Ships are dangerous places, and even the most harmless areas can be hazardous. The most basic building blocks of personal safety on board ships is to follow the correct safety procedures OB established by the international regulations and company SMS.

Ships are strictly governed, and there are many rules in place. In addition, each ship and shipping company has its own set of procedures laid down within its SMS.

Cadet should learn the main principles of safe working practices OB. Completion of tasks should reflected in the below table.

Tasks **Cadet should acquire an adequately knowledge in the following subjects:**	**Ship's Name**					
Risk Assessment and mitigation Procedures	☐	☐	☐	☐	☐	☐
Work Permit procedures	☐	☐	☐	☐	☐	☐
Types of work permits	☐	☐	☐	☐	☐	☐
Hot work procedures	☐	☐	☐	☐	☐	☐
Describe an enclosed spaces	☐	☐	☐	☐	☐	☐
Enclosed Space Entry Procedures	☐	☐	☐	☐	☐	☐
Enclosed Space rescue Procedures	☐	☐	☐	☐	☐	☐
Use of Gas detection and measuring equipment	☐	☐	☐	☐	☐	☐

Ballast tanks	☐	☐	☐	☐	☐	☐
Void spaces	☐	☐	☐	☐	☐	☐
Chemical Locker	☐	☐	☐	☐	☐	☐
Electric shock rescue procedures	☐	☐	☐	☐	☐	☐
Safety Precautions during Mooring and anchoring operations	☐	☐	☐	☐	☐	☐
Safety Precautions during Bunkering operations	☐	☐	☐	☐	☐	☐
Understanding of safe working practices for use of welding and cutting equipment	☐	☐	☐	☐	☐	☐
Understanding of safe working practices for lathe Machine.	☐	☐	☐	☐	☐	☐
Incident/near miss reporting procedures	☐	☐	☐	☐	☐	☐
Date of Familiarization:						
Signature of responsible Officer:						

PART 8: TRAINING TASKS.

FOR OFFICERS IN CHARGE OF AN ENGINEERING WATCH(STCW CODE TABLE A-III/1):

8 PART : Training Tasks

COMPETENCES FOR OFFICERS IN CHARGE OF A ENGINEERING WATCH (STCW CODE TABLE A-III/1):

Marine Engineering at the operational Level **1. Operational procedures & Duties** **2. Use the IMO Standard Marine Communication Phrases and use English in written and oral form** **3. Bunkering operation** **4. Operate main and auxiliary machinery and associated control systems** **5. Operate fuel, lubrication, ballasts sludge, bilge and other pumping systems and associated control systems** **Electrical, Electronic and Control Engineering at the Operational Level** **6. Operate electrical, electronic and control systems** **7. Maintenance and repair of electrical and electronic equipment** **Maintenance and Repair at the Operational Level** **8. Appropriate use of hands tools, machine tools and measuring instruments for fabrication and repair on board** **9. Maintenance and repair of shipboard machinery and equipment**	**Controlling the Operational of the Ship and Care for Persons On Board at the Operational Level** **10. Ensure compliance with pollution prevention requirements** **11. Maintain seaworthiness of the ship** **12. Prevent, control and fight fires on board** **13. Operate life-saving appliances** **14. Apply medical first aid on board ship** **15. Monitor compliance with legislative requirements** **16. Application of leadership and team working skills**

8.1 FUNCTION: MARINE ENGINEERING AT THE OPERATIONAL LEVEL

1.	Competence: Operational procedure & duties	Task Completed	Assigned N of Ship	Date	Initials
	Task: Safe Engineering Watch & Machinery maintenance schedule				
1.1	unattended or unmanned machinery space (U.M.S) operation	☐			
1.2	bridge control for engines. Describe how orders are given, confirmed and executed and the interactions with the engine room and other parts of the vessel.	☐			
1.3	engineers of the watch (duty engineers)	☐			
1.4	routine for taking over a watch	☐			
1.5	standing orders & instruction	☐			
1.6	inspection of machinery	☐			
1.7	steering gear inspection	☐			
1.8	water level in boilers	☐			
1.9	procedure in case of machinery defect	☐			
1.10	vessel in port	☐			
1.11	vessel at anchor	☐			
1.12	vessel in stand-by condition	☐			
1.13	seagoing watches	☐			
1.14	permit to work system (list of items to be checked)	☐			
1.15	entry into enclosed space permit (list of items to be checked)	☐			
1.16	hot work permit (list of items to be checked)	☐			
1.17	cold work permit (list of items to be checked)	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

2.	**Competence: Use the IMO Standard Marine Communication Phrases and use English in written and oral form**	Task Completed	Assigned N of Ship	Date	Initials
2.1	**Task: Use the IMO Standard Marine Communication Phrases**				
1.	Use the IMO Standard Marine Communication Phrases with: Bunker Barge.	☐			
2.2	**Task: communicate in English for the execution of their routine and emergency response duties.**				
1.	Demonstrate understanding of contents and use of: Maker Manuals/Instructions & Company SMS.	☐			
2.	Ship's routeing information	☐			
3.	Demonstrate correct use of terms in the engine room and names of machinery, equipment and tools	☐			
4.	Give and take orders in English concerning: Routine operations	☐			
2.3	***Task: Fill in standard English reports and forms***				
1.	Arrival Report	☐			
2.	Departure Report	☐			

3.	UMS Check list				
4.	Make a proper record in Engine log Book				
5.	Proper Filling ORB (Oil Record Book)				
6.	Make a Proper records in Movement Book (Bell Book)				
2.4	***Task: Communicate with members of the watch in safety related duties***				
1.	Demonstrate an ability to communicate instructions to a multinational crew				
2.	Show an ability to supervise ratings during Bunkering operations				
3.	Use hand held transceivers (portable radios)				

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

3.	Competence: Bunkering operation	Task Completed	Assigned N of Ship	Date	Initials
3.1	**Task: complete bunkering survey**				
1.	Grades - Specification	☐			
2.	Describe the procedures for taking bunkers. State clearly the sequence of events and the precautions taken. Evaluate the results of any tests taken at the time or from analysis made by a laboratory ashore.				
3.	Responsibilities/persons involved in bunkering: Engineer in charge of measurement/calculation, Officer in charge of safety reason, bunker watch kipper, deck rover watch.	☐			
4.	Pre-bunkering meeting with all involved persons	☐			
5.	Pipeline diagram including location of all valves, pumps, controls, vents and overflow systems and alarms. (copy of Diagram to be attached)	☐			
6.	List of items to be checked Before, During & After Bunkering operation.	☐			
7.	Procedures for emergency shut down.	☐			
8.	Topping-off procedures	☐			
9.	Ship/barge (or shore) communication procedures/internal communication.	☐			
10.	Sampling procedure, bunkering manifold is the transfer point where the continuous dripping / sampling is taking place	☐			
11.	Pre bunkering survey of All bunker tanks of the vessel (irrespective of the number of tanks that are to be used) to establish the ROB quantities;	☐			
12.	Demonstrate an understanding of Bunker Delivery Note. (BDN)	☐			
13.	Barge post-bunkering survey	☐			
14.	Demonstrate knowledge of Bunker documentation (Bunker plan, Bunker check list)	☐			
15.	Safety & anti-pollution measures	☐			
16.	Demonstrate an understanding of Internal transfer procedure	☐			
17.	Material safety data. measuring (H2S Hydrogen Sulphide/Benzene content)	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	Competence Achieved: YES NO Verified by On Board Training supervisor or Responsible person. Full name: Signature: Date:

4.	Competence: Operate main and auxiliary machinery and associated control systems	Task Completed	Assigned N of Ship	Date	Initials
4.1	**Task: Prepare machinery for departure from port**				
1.	Draw a schematic arrangement of the main engine system, using blocks to indicate the main components	☐			
2.	Prepare and test the steering gear telegraphs for sea passage	☐			
3.	Confirm bridge and ER communications	☐			
4.	Check starting air compressor and prepare staring air system	☐			
5.	Prepare main and auxiliary machinery for port departure	☐			
6.	Prepare main and auxiliary machinery for a sea passage	☐			
7.	Demonstrate a knowledge of the use of high level and low-level sea suctions	☐			
8.	Subject to be checked as per Departure/Arrival Check list (Copy of check list to be attached)	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	Competence Achieved: YES NO Verified by On Board Training supervisor or Responsible person. Full name: Signature: Date:

4.2	*Task: Operate main and auxiliary machinery*	Task Completed	Assigned N of Ship	Date	Initials
1.	Sketch, in diagrammatic form, the main systems as appropriate for your ship:	☐			
2.	Auxiliary engine	☐			
3.	Auxiliary boiler system	☐			
4.	Carry out start-up checks of main engine and shafting	☐			
5.	Start main engine from local and remote-control positions	☐			
6.	Manually operate main compressor and change over to normal running mode	☐			
7.	Record pressures and temperatures for normal running, and note system valve settings and positions for normal running	☐			
8.	Respond to instructions from the bridge and operate the main engine controls during periods of manoeuvring	☐			
9.	Water wash exhaust side main engine turbocharger	☐			
10.	Change local/ manual control of machinery and systems to remote automatic control and appropriate	☐			
11.	Adjust main engine and auxiliary machinery for continuous running	☐			
12.	Report abnormal conditions, making a record of same	☐			

13.	Prepare and run an evaporator/ fresh water generator	☐			
14.	Apply tests and conditioning for purity and portability of fresh water	☐			
15.	Check crankcase oil mist detector and demonstrate action to be taken in case of an alarm	☐			
16.	Check governors	☐			
17.	Take power diagram or readings and estimate mean effective pressure and indicated power (copy of report to be attached)	☐			
18.	What is the average lube oil consumption of cylinder and crankcase oil? Why does this loss occur?	☐			
19.	Carry out routine tests on: Engine cooling water	☐			
20.	Carry out routine tests on: Fuel oil	☐			
21.	Carry out routine tests on: Lube oil	☐			
22.	Assist with shutting down main engine and auxiliary systems when finished with engines	☐			
23.	Fill a boiler and raise steam from cold	☐			
24.	Admit steam to a line or system, taking all precautions against thermal and pressure shock and avoidance of water hammer	☐			
25.	Check the security of steam pipes and provisions for expansion	☐			
26.	Check that steam traps and drains are functioning	☐			
27.	Close down a steam line, observing procedure for draining	☐			
28.	Check quality of combustion, noting: Smoke from the funnel, Flame shape, size and colour\excess air, CO2/CO reading, Carbon and unburnt fuel deposits	☐			
29.	Check returns from heating coils and other possible sources of contaminated feedwater	☐			
30.	Check the correct functioning of all boiler condition indicators and alarms	☐			
31.	Check that correct boiler water level is maintained	☐			
32.	Demonstrate the correct procedure for blowing down a boiler gauge glass & blow down valves.	☐			

33.	Start up and operate ship's refrigeration plant	☐			
34.	Shut down and secure refrigeration/ AC plant	☐			
35.	Carry out refrigerant charging procedure, proper use of refrigerant recovery system.	☐			
36.	Carry out leak detection for refrigerant gases	☐			
37.	Check pressure tank safety devices	☐			
38.	Put sewage system on line	☐			
39.	Operate the incinerator	☐			
40.	Operate waste shredder/ compactor	☐			
41.	Steering Gear Describe the emergency operation of the steering gear	☐			
42.	Other (state)	☐			
43.	Other (state)	☐			
43.	Other (state)	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO**
	Verified by On Board Training supervisor or Responsible person. **Full name:** **Signature:** **Date:**

5.	Competence: Operate fuel, lubrication, ballasts sludge, bilge and other pumping systems and associated control systems				
5.1	**Task: Plan the operations of auxiliary and piping systems and service plants**	Task Completed	Assigned N of Ship	Date	Initials
1.	Sketch a line diagram of the oily water separator (OWS) system	☐			
2.	Sketch a line diagram of the ballast water system	☐			
3.	Sketch a line diagram of the engine room bilge water system	☐			
4.	Sketch a line diagram of Lub oil transfer system				
5.	Sketch a line diagram of Fuel oil transfer system				
6.	Sketch a line diagram of sludge transfer system (IOPP tanks and associated system)	☐			
7.	Assist with the operation of the OWS 15 PPM equipment	☐			
8.	Assist with the operation of the Incinerator	☐			
9.	Demonstrate a knowledge of making correct entries in the Oil Record Book	☐			
10.	Assist with planning ballast water management operations	☐			
11.	Plan and line-up: Ballast water pump	☐			
12.	Sketch a line diagram of the fuel oil bunker system	☐			
13.	Assist with planning for: Receiving bunkers (copy of bunker plan to be attached)	☐			
14.	Transfer of fuel from bunker tanks to Settling tanks	☐			
15.	Participate with procedure of pressure test (Hydrostatic test of Bunker line (copy of report to be attached)	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	Competence Achieved: YES NO Verified by On Board Training supervisor or Responsible person. Full name: Signature: Date:

5.2	Task: Operate the systems for fuel oil, lube oil, ballast, bilge, MARPOL equipment and cargo pumping	Task Completed	Assigned N of Ship	Date	Initials
1.	Under supervision, transfer fuel from bunkers to settling tanks, observing all safety, ship stability and pollution prevention requirements	☐			
2.	Drain water/sludge from settling tanks	☐			
3.	Start, operate and monitor fuel oil purifiers	☐			
4.	Familiar with reequipments of Sulphur Emissions Control Areas (ECA)	☐			
5.	Assist an officer with change over from heavy fuel oil to low viscosity diesel oil and vice versa, where applicable	☐			
6.	Start, operate and monitor lube oil purifiers	☐			
7.	Perform routine checks and top ups to maintain lube oil system tanks at the correct levels	☐			
8.	Set up and use an OWS in compliance with MARPOL	☐			
9.	Operate an oil discharge monitor in compliance with MARPOL (oil tankers)	☐			
10.	Observe all pollution prevention requirements	☐			
11.	Open up OWS units, clean all parts and reassemble	☐			

12.	Observing all safety, ship stability and pollution prevention requirements, assist an officer with: Ballasting/Deballasting	☐			
13.	Demonstrate the emergency arrangements for emptying engine room bilges in the event of flooding	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

8.2 Electrical, Electronic and Control Engineering at the Operational Level

6.	**Competence: Operate electrical, electronic and control systems**				
6.1	**Task: Basic configuration and operating principles of electrical equipment: Locate and use relevant manuals, drawings, diagrams and instructions for electrical equipment and distribution systems**	Task Completed	Assigned N of Ship	Date	Initials
1.	Explain the difference between a system diagram, a circuit diagram and a wiring diagram	☐			
2.	Demonstrate an ability to use ship's diagrams to identify: Main circuit breakers, Emergency switchboard connections, Trips (over current, reverse power, low frequency), Transformers, Fuses, Supply voltages, Shore connections, The types of motors and motor starters	☐			
3.	Demonstrate a knowledge of symbols commonly used on circuit diagrams	☐			
4.	Demonstrate a knowledge of the location of major control and protection devices within the distribution network	☐			
5.	Demonstrate a knowledge of which electrical loads are classed as essential or non-essential, and how essential services are supplied	☐			
6.	Locate shore power connection and state the procedures for connection/disconnection	☐			
6.2	**Task: Prepare and start alternators or generators**				
1.	Prepare for starting in manual and remote modes	☐			
2.	Items to be inspected before start-up	☐			
3.	Check that all controls are functioning correctly	☐			
4.	Demonstrate knowledge of trips and how to reset for: Over current, Reverse power, Low frequency.	☐			
5.	Check exhaust pipes, fuel pipeline, lub oil system & Cooling system for leakage	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	Competence Achieved: YES NO Verified by On Board Training supervisor or Responsible person. Full name: Signature: Date:

6.3	Task: Parallel and change-over alternators or generators	Task Completed	Assigned N of Ship	Date	Initials
1.	After start-up, run up to speed, use paralleling procedures and put on load, including shaft generators and emergency generators. Systems Describe the procedure for paralleling the ship's alternators or generators. Explain how load sharing is achieved	☐			
2.	Adjust the load share of machines running in parallel	☐			
3.	Remove the load from a machine running in parallel, stop and shut down	☐			
4.	Describe the safety features in the power distribution system which protect alternators in case of a major fault	☐			
5.	Explain how instability in a control system can occur	☐			
6.4	**Task: Proportional-Integral-Derivative (PID) control characteristics**				
1.	Demonstrate a knowledge of PID control characteristics and associated system devices for process for process control	☐			
2.	Give examples of Proportional-Integral-Derivative (PID) controllers that may be adjust to achieve improved results/stability	☐			
3.	Explain the basic principle of three term control	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	Competence Achieved: YES NO Verified by On Board Training supervisor or Responsible person. Full name: Signature: Date:

6.5	Task: Basic configuration and operating principles of electrical and electronic control systems: automatic control methodologies and characteristics	Task Completed	Assigned N of Ship	Date	Initials
1.	Explain the term 'high gain' in a control system	☐			
2.	Explain how instability in a control system can occur	☐			
3.	Sketch a diagrammatic arrangements of an automatic control system you have worked on showing the control elements	☐			
4.	Describe the function of a PLC-based controller, identifying pre-set and adjustable parameters	☐			
5.	Give an example of a system where 'droop' has to be controlled	☐			
6.	Describe the function of a PLC-based controller, identifying pre-set and adjustable parameters	☐			
7.	Sketch and describe a component providing electronic equipment control	☐			
8.	Assist with routine checks and tests on electronic equipment	☐			
9.	Demonstrate a knowledge of electronic circuit symbols	☐			
10.	Demonstrate a knowledge of the characteristics of basic electronic circuit elements	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	Competence Achieved: YES NO Verified by On Board Training supervisor or Responsible person. Full name: Signature: Date:

6.6	Task: Flow chart for automatic and control systems	Task Completed	Assigned N of Ship	Date	Initials
1.	Demonstrate a knowledge of process signal symbols and terminology commonly used with control system diagrams	☐			
2.	Sketch a part of the ship's electrical distribution system that uses sequential control circuits	☐			
3.	List other items of equipment that use sequential control circuits	☐			
4.	Demonstrate a knowledge of flowcharts for automatic and control systems for electronic equipment operation	☐			
6.7	**Task: Functions, characteristics and features of control systems for machinery**				
1.	Sketch and describe a system of electronic control	☐			
2.	Demonstrate a knowledge of the functions, characteristics and features of the control system for: Main propulsion engine	☐			
3.	Auxiliary & Composite Boilers	☐			
4.	Steering gear	☐			
5.	Refrigerant Plant	☐			
6.	Main & Service air Compressors	☐			

7.	Other (state)	☐			
8.	Other (state)	☐			
On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):		**Competence Achieved: YES NO**			
		Verified by On Board Training supervisor or Responsible person. **Full name:** **Signature:** **Date:**			

7.	**Competence: 7. Maintenance and repair of electrical and electronic equipment**				
7.1	**Task: Locate and interpret electrical and simple electronic diagrams**	Task Completed	Assigned N of Ship	Date	Initials
1.	List shipboard equipment for which relevant manuals/diagrams used: 1. …… 2. …… 3. …… 4. …… 5. ……	☐			
7.2	**Task: Knowledge of construction and operation of electrical testing and measuring equipment**				

1.	Measuring Instruments and Test Equipment Used1. …… 2. …… 3. …… 4. …… 5. ……	☐			
On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):		**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**			
7.3	**Task: Ensure safety of all personnel working on electrical systems, including the safe isolation of electrical equipment, required before personnel are permitted to work on such equipment**	**Task Completed**	**Assigned N of Ship**	**Date**	**Initials**
1.	Isolate and lock out electrical equipment, applying safety measures	☐			
2.	Apply knowledge of safe use of electrical equipment for testing and maintenance in hazardous areas	☐			
3.	Demonstrate an understanding of safe working practices and procedures including use of appropriate clothing for: Use of power operated tools	☐			
4.	Entry into enclosed spaces (tank entry) with electrical equipment	☐			
5.	Use of lifting gear	☐			

6.	Work on electrical machinery	☐			
7.	Explain the precautions to be taken when testing the insulation of generator cables and wiring connected to an automatic voltage regulator (AVR) unit	☐			
8.	Explain why step-down isolating transformers are sometimes used with portable tools and hand lamps	☐			
On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):		**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**			
7.4	**Task: Maintenance and repair of electrical system equipment, switchboards, electric motors, generator and DC electrical systems and equipment**	**Task Completed**	**Assigned N of Ship**	**Date**	**Initials**
1.	Assist with routine checks and tests on electronic control systems	☐			
2.	Demonstrate a knowledge of main switchboard and control room console layouts	☐			
3.	Sketch a circuit diagram showing the arrangements for emergency battery charging for the ER alarm system	☐			
4.	Demonstrate a knowledge of the vessel's emergency power requirements	☐			
5.	Assist with main switchboard routine maintenance of contacts and connections	☐			
6.	Demonstrate a knowledge of switchboard instrumentation and safe working practices associated with its maintenance	☐			
7.	Assist with measuring the insulation resistance of a generator	☐			

8.	Explain why insulation testing is best conducted while hot, or at working temperature	☐			
9.	Carry out insulation tests on a motor using a Megger	☐			
10.	Sketch a circuit diagram showing the arrangements for battery charging	☐			
11.	Carry out routine testing and maintenance on emergency storage batteries	☐			
7.5	**Task: Detect and repair electrical faults and malfunctions and take measures to prevent damage**				
1.	Sketch the circuit diagram for the earth indicator lamps on the main switchboard	☐			
2.	Carry out Megger testing for insulation resistance and continuity testing	☐			
3.	Assist with fault finding on electrical equipment control systems	☐			
4.	Assist with tracing earth faults	☐			
On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):		**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**			
7.6	**Task: Detectio of electric malfunction, location of faults and measures to prevent damage**	**Task Completed**	**Assigned N of Ship**	**Date**	**Initials**
1.	Demonstrate a knowledge of earth faults and how to avoid them	☐			
2.	Assist in tracing and correcting earth faults	☐			
3.	Isolate and lock out associated equipment when engaged in repair or maintenance work	☐			

4.	Carry out routine testing and maintenance on alarm systems, ensuring that the circuits are isolated, locked out and protected by notices and that appropriate permit to work is issued	☐			
5.	Assist with correct earthing-down routine for maintenance work on high voltage equipment(if applicable)	☐			
6.	Assist with fault finding on ship's lighting circuits and component testing	☐			
7.	Assist with repairing or replacing various types of accommodation lights, cargo hold and deck flood lights used on board	☐			
7.7	**Task: Knowledge of the function and performance tests and configuration of monitoring systems, automatic control devices and protective devices**				
1.	State at least one main engine monitoring system that automatically stops the engine in case of a fault	☐			
2.	Repair or replace: Fuses, Control lamps, Temperature sensors, Pressure sensors.	☐			
3.	Carry out routine testing and maintenance on: Circuit breakers, Lights, Tripping mechanisms.	☐			
4.	Check alarm settings and pre-sets contained in a system maintenance log	☐			
5.	Explain where heat is generated in an electronic drive and how it is dissipated	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

8.3 FUNCTION: Maintenance and Repair at the Operational Level

8.	**Competence: Appropriate use of hands tools, machine tools and measuring instruments for fabrication and repair on board**	Task Completed	Assigned N of Ship	Date	Initials
8.1	**Task: Workshop, Repair and Overhauling Equipment**				
1.	Welding and Burning Equipment (Gas and Electric Arc)	☐			
2.	Electric Arc Welding Equipment	☐			
3.	3 important connections for every welding circuit: (a) the Welding Lead (b) the Welding Return (c) the Welding Earth	☐			
4.	Gas Welding and Cutting Equipment	☐			
5.	Proper storage of Gas cylinder: oxygen and acetylene. (Other Gasses)	☐			
6.	Protection caps of Cylinders.	☐			
7.	Good understanding purpose of Flashback arrestors	☐			
8.2	**Task: USE OF POWER TOOLS**				
1.	How to choose/select proper tool for assigned work	☐			
2.	Tools used when working aloft	☐			
3.	Tools used when cold work	☐			
4.	Tools used in unclosed spare.	☐			

5.	Workshop Machinery:				
6.	Pedestal Grinding Machines				
7.	Correct position of guards and rests.				
8.	Portable Grinders, Power Brushes and Power Tools				
9.	Good understanding of Maximum rated spindle speed.				
10.	Safety marking & warning signs of Lifting equipment				
On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):		**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**			
8.3	**Task: Use of measuring instruments**	Task Completed	Assigned N of Ship	Date	Initials
1.	odd leg calipers				
2.	digital calipers				
3.	internal micrometer				
4.	depth gauge				
5.	vernier gauge.				
8.4	**Task: Use of sealants and packings**				
1.	Demonstrate the correct use of various types of sealants and packings.				
2.	Gasketing materials, including compressed non-asbestos, cork, rubber and fibre				

3.	Valve stem packing	☐			
4.	O-Ring seal	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

9.	**Competence: Maintenance and repair of shipboard machinery and equipment**				
9.1	**Task: Before starting any maintenance or repair, to ensure correct operation and maintenance of the installed equipment relevant instructions & Drawings should be used relating to machinery.**	Task Completed	Assigned N of Ship	Date	Initials
1.	familiar with Guidelines on carrying out main PMS jobs (planned maintenance system)	☐			
2.	Demonstrate an understanding of manufacturers' instructions and drawings for use in maintenance tasks	☐			
3.	Took parts in filling out a Jobs in planned maintenance system	☐			

4.	Participate in a survey of running machinery using condition monitoring equipment, if applicable	☐			
5.	How to maintenance spare gear to have always in first class condition, ready for use at very short notice.	☐			
9.2	**Task: Establish healthy and safe working environment on board**				
1.	Establish safeguards against identified risks and potential pollution	☐			
2.	Prepare and exercise for emergency situations	☐			
3.	Demonstrate an understanding of safe working practices and procedures for:	☐			
4.	Entry into enclosed spaces (tank entry)	☐			
5.	Use of the Lifting equipment	☐			
6.	Work on electrical machinery	☐			
7.	Working aloft	☐			
8.	Use of PPE	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

9.3	**Task: Running & repairs of Main Engine**	Task Completed	Assigned N of Ship	Date	Initials
1.	Take and log readings of crankshaft deflections (copy of report to be attached)	☐			
2.	Inspect, check condition, wear and clearance, overhaul and test, as appropriate:	☐			

3.	Exhaust Valves	☐			
4.	Fuel injection valves	☐			
5.	Starting Air Valves	☐			
6.	Indicator cocks	☐			
7.	Cylinder Head Safety Valve	☐			
8.	High Pressure Fuel Pumps	☐			
9.	Exhaust Valve Hyd Pumps	☐			
10.	Crosshead bearings	☐			
11.	Camshaft	☐			
12.	Calculate of the indicated & effective engine power (copy of report to be attached)	☐			
13.	Fuel Oil filters	☐			
14.	Lub Oil filters	☐			
15.	Air filters	☐			
16.	Use turning gear, under supervision, taking all safety precautions	☐			
17.	Change and/or overhaul the following main engine components, checking clearances, **where appropriate**: Piston	☐			
18.	Cylinder heads	☐			
19.	Turbochargers	☐			
20.	Top end bearings	☐			
21.	Bottom end bearings	☐			
22.	Main bearings	☐			
23.	Piston-rod scraper box/stuffing box	☐			
19.	Crosshead guides	☐			
20.	Tie bolts	☐			
21.	Holding-down bolt and chocks	☐			
22.	Inspect scavenge trunk and exhaust spaces and report on: Cleanliness/deposits	☐			
23.	Carry out a crankcase inspection	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

9.4	Task: Diesel Engine Overheating/Protection against Crankcase Explosion	Task Completed	Assigned N of Ship	Date	Initials
1.	Crankcase Oil Mist Detectors	☐			
2.	Take and log readings of crankshaft deflections (Copy of report to be attached)	☐			
3.	Change, inspect, check condition, wear and clearance, overhaul and test: Fuel injection valves	☐			
4.	Starting Air Valves	☐			
5.	Cylinder Head safety Valves	☐			
6.	1.	☐			
7.	Camshaft	☐			
8.	Fuel pumps	☐			
9.	Crankcase relief Valves	☐			

10.	Fuel Oil Filter	☐			
11.	Lub Oil Filter	☐			
12.	Air Filter	☐			
13.	Jacket cooling water pump	☐			
14.	Lub Oil Pump	☐			
15.	Change and/or overhaul the following components, checking and adjusting clearances, where appropriate: Pistons	☐			
16.	Cylinder heads	☐			
17.	Turbochargers	☐			
18.	Top end bearings	☐			
19.	Bottom end bearings	☐			
20.	Main bearings	☐			
21.	Indicator cocks	☐			
22.	Holding-down bolts and chocks	☐			
23.	Carry out a crankcase inspection	☐			
24.	Commission engine after overhaul	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

9.5	**Task: Undertake maintenance and repair to the steam generating system**	Task Completed	Assigned N of Ship	Date	Initials
1.	Take a boiler out of service	☐			
2.	Isolate boiler	☐			
3.	Precautions before Lighting Boilers	☐			
4.	Raising Steam	☐			
5.	Boiler Water Tests and Treatment (copy of report to be attached)	☐			
6.	Boiler Chemicals	☐			
7.	Blowing Down Boilers	☐			
8.	Open up a boiler	☐			
9.	Examine a boiler, reporting on its condition: Internally/externally	☐			
10.	Open up and inspect: Safety valves	☐			
11.	Feed check valves	☐			
12.	Ancillary valves	☐			
13.	Overhaul and test water gauge glass and check that passages, cock and valves are clear/ Blowing down procedure	☐			
14.	Change and overhaul burner	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

9.6	**Task: Machinery Maintenance/repair – Safety Precautions**	**Task Completed**	**Assigned N of Ship**	**Date**	**Initials**
1.	Overhauling of purifiers/separators for cleaning and maintenance	☐			
2.	Overhauling of Main & service air compressor/carried out performance test	☐			
3.	Check and service: Control air drier	☐			
4.	Carry out routine maintenance on refrigeration plant	☐			
5.	Carry out routine maintenance on fresh water generator/ chemical cleaning procedure.	☐			
6.	Carried out routine maintenance of air conditioning installation	☐			
7.	Overhauling of centrifugal pumps	☐			
8.	Overhaul positive displacement pump	☐			
9.	Overhaul and test valves including: Gate, non-return, Screw lift, Relief, Two or three way, Shut-off cock.	☐			
10.	Chemical cleaning of tubular & plate type heat exchangers/coolers	☐			
11.	Pressure test of tubular & plate type heat exchangers/coolers	☐			
		Competence Achieved: YES NO			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	Verified by On Board Training supervisor or Responsible person. Full name: Signature: Date:

9.7	Task: Deck Machinery	Task Completed	Assigned N of Ship	Date	Initials
1.	Windlasses and Winches, Winch render test, (copy of report to be attached)	☐			
2.	Hose Handling Crane, carried out Crane rocking test (Copy of report to be attached)	☐			
3.	Provision Crane, carried out Crane rocking test (Copy of report to be attached)	☐			
9.8	**Task: Undertake maintenance and repair of emergency equipment**				
1.	Carry out routine maintenance on: Fire pumps	☐			
2.	Emergency generator, carried out on-load test	☐			
3.	Emergency compressor	☐			
4.	Fuel tank quick closing device.	☐			
5.	Fire flaps	☐			
6.	Breathing apparatus sets and recharging breathing apparatus bottles	☐			
7.	Overhauling Emergency Bilge Suction Valve	☐			
		Competence Achieved: YES NO			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

8.4 Function: Controlling the Operational of the Ship and Care for Persons On Board at the Operational Level

10.	**Competence: Ensure compliance with pollution-prevention requirements**				
10.1	**Task: Implement proactive measures to protect the marine environment**	Task Completed	Assigned N of Ship	Date	Initials
.1	Understand that environmental protection includes both sea and air which are protected by detailed MARPOL regulation	☐			
.2	Name at least two Particularly Sensitive Sea Areas (PSSAs)	☐			
.3	Demonstrate by example preparedness to take personal responsibility for actions to protect the marine environment	☐			

.4	Understand that marine pollutant must be landed ashore for safe disposal in compliance with MARPOL	☐			
.5	Understand that there are strict rules covering disposal at sea of oily water mixtures applicable to all ships	☐			
.6	Understand the safe and correct operation of the oily water separator, including requirement for accurate record keeping	☐			
.7	Understand that there are strict rules covering disposal of noxious liquid substances applicable to all	☐			
.8	Understand that there are strict rules covering disposal of harmful substances carried in packaged form applicable to ships	☐			
.9	Understand that there are strict rules covering pollution prevention by sewage applicable to all ships	☐			
.10	Understand that there are strict rules for prevention of pollution by garbage from ships , applicable to all ships	☐			
.11	Understand that there are strict rules covering air pollution from ships which will progressively apply to all ships	☐			
.12	Understand the impact of Sox, NOx and why efforts are needed to reduce atmospheric pollution	☐			
.13	Understand that there are strict rules covering the management and treatment of ballast water	☐			
.14	Understand the requirements under the ISM Code regarding environmental protection	☐			
		Competence Achieved: YES NO			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	Verified by On Board Training supervisor or Responsible person. Full name: Signature: Date:

10.2	Task: Ensure that procedures are agreed and properly planned and all scuppers are blocked before bunkering	Task Completed	Assigned N of Ship	Date	Initials
.1	Plug deck scuppers	☐			
.2	Demonstrate knowledge of ship's bunkering procedures, (Copy of Bunker check list & Bunker Plan to be attached)	☐			
.3	Participate in bunkering operations	☐			
.4	Clarify Minutes of pre-Bunker meeting.	☐			
.5	Demonstrate the emergency shutdown procedure	☐			
10.3	**Task: Initiate immediate investigation to detect the source on discovering any pollution around the ship**	**Task Completed**	**Assigned N of Ship**	**Date**	**Initials**
.1	Participate in an emergency response exercise for controlling spillage of oil or other noxious or toxic substances on board	☐			
10.4	**Task: Stop or prevent leakages and spills of harmful liquids and solid substances**				
.1	Demonstrate use of Material Safety Data Sheets and the IMDG Code for obtaining information on cargo hazards and handling instructions	☐			
.2	Participate in drill for clean-up of hazardous cargo spillage	☐			

10.5	Task: Carry out bilge, ballast and bunkering operations				
.1	Locate the ship's ballast water management plan and demonstrate an understanding of its content	☐			
.2	A ballasting operation	☐			
.3	A tank cleaning operation	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

11.	Competence: maintain seaworthiness of the ship				
11.1	**Task: Inspect hull and hull openings, compartments, hatch covers and equipment, and take action where defects are detected**	Task Completed	Assigned N of Ship	Date	Initials
.1	Demonstrate an understanding of: The precautions required for entry into enclosed spaces	☐			
.2	Working aloft	☐			
.3	Working over side	☐			

.4	Using power tools	☐			
.5	Manual lifting and carrying	☐			
.6	Where applicable, assist with the opening, closing and securing of hatches: Steel and single pull types	☐			
.7	Hydraulic hatches	☐			
.8	Assist with the maintenance of watertight doors, ports and securing of hatches	☐			
.9	Assist with the maintenance of fairleads, tumblers, goosenecks etc.	☐			
.10	Inspect and lubricate roller beams	☐			
.11	Carry out a full inventory check of the Engine stores	☐			
.12	Prepare steel plates and other surfaces for protective coating	☐			
.13	Apply protective coats to appropriate surfaces	☐			
11.2	**Task: Ensure that all loose objects are securely fastened to avoid damage**				
.1	Ensure that all gear, tools spares etc. are properly stowed and secured	☐			
.2	Assist with the rigging of safety lines and guard rails	☐			
11.3	**Task: Arrange for regular control measures to ensure watertight integrity**				
.1	Take and record the daily soundings of Fuel, Lub oil, Domestic water tanks, bilges, sludges and other spaces: By manual means	☐			
.2	By use of gauges	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

12.	Competence: Prevent, control and fight fires on board				
12.1	**Task: Operate fire and smoke detecting equipment**	**Task Completed**	**Assigned N of Ship**	**Date**	**Initials**
.1	Understand the use and assist in the maintenance of: portable foam extinguisher	☐			
.2	Portable CO2 extinguisher	☐			
.3	Portable dry powder extinguisher	☐			
.4	Portable water extinguisher	☐			
.5	Maintain hoses, nozzle and couplings	☐			
12.2	**Task: Ensure that all persons on watch are able to detect and correct hazardous situations and actions and keep the ship clean and tidy**				
.1	Perform fire patrol duties	☐			
.2	Re-stow gear and secure after maintenance work	☐			
12.3	**Task: Locate fire fighting appliances, emergency escape routes and sound alarm**				

.1	Carry out a full inspection of firefighting equipment and report to the chief officer	☐			
.2	Participate in an emergency response exercise for fire at sea and fire in port	☐			
.3	Demonstrate how to raise the alarm	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

12.4	Task: Locate fire stations and demonstrate proper use of fixed installations and other firefighting appliances and agents	Task Completed	Assigned N of Ship	Date	Initials
.1	Assist with the testing of the following systems, where fitted: Fire detection and alarm systems	☐			
.2	Fire alarms	☐			
.3	Fixed automatic sprinklers	☐			
.4	Fixed water mist system	☐			
.5	Fixed foam extinguishers	☐			
.6	Fixed CO2 systems	☐			
.7	Fire flaps and dampers	☐			
.8	Automatic and manual fire doors	☐			
.9	Emergency shut off valves, pump stops and main engine stops	☐			
.10	Describe the operation of the fixed fire extinguishing system	☐			
.11	State the safety precautions required prior to operating the system	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	Competence Achieved: YES NO Verified by On Board Training supervisor or Responsible person. Full name: Signature: Date:

12.5	Task: Locate and use fire protective equipment (fire-fighter's outfit, including breathing apparatus)	Task Completed	Assigned N of Ship	Date	Initials
.1	Demonstrate the procedures and precautions required for entry into an enclosed space	☐			
.2	Recognize the difference between a Self-Contained Breathing Apparatus (SCBA) set and an Emergency Escape Breathing Device	☐			
.3	Demonstrate donning and use of SCBA sets	☐			
.4	Demonstrate donning and use of a fire-fighter's outfit	☐			
.5	Demonstrate donning and use of a fire fighter's outfit with a SCBA set	☐			
.6	Demonstrate the use of a SCBA record/control board	☐			
12.6	**Task: Demonstrate ability to act in accordance with the firefighting plan during fire drills**				
.1	Take charge of a fire party during an exercise	☐			
.2	Demonstrate the use and location of all engine-room safety appliances and escape routes	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	Competence Achieved: YES NO Verified by On Board Training supervisor or Responsible person. Full name: Signature: Date:

13.	Competence: Operate life-saving appliances				
13.1	**Task: Organize abandon ship drills**	Task Completed	Assigned N of Ship	Date	Initials
.1	Understand the hazards to seafarers of manning lifeboats for drills and exercises	☐			
.2	Understand the need to be familiar with the operation of on-load release mechanisms	☐			
.3	Recognize that fall prevention devices (FPDs) where fitted, should be used in drills (to prevent premature detachment	☐			
.4	Recognize the need for meticulous inspection and maintenance of on-load release mechanisms	☐			
.5	Understand the maintenance requirements by shipboard personnel and by the manufacturer or manufacturer approved agents	☐			
.6	Under supervision demonstrate familiarity with the lifeboat manufacturers operating instructions for the use and operation of the davits, winches, brakes, lifeboats, release	☐			

	and operating mechanisms (including FPD where fitted) and the correct resetting and testing of such devices and controls				
.7	Identify the permanent markings on survival craft with regard to the number of occupants	☐			
.8	Locate and test the operation of radio devices including EPIRBs and SARTs	☐			
.9	Locate and inspect pyrotechnic distress signals	☐			
.10	State precautions for disposal of out of date pyrotechnics	☐			
.11	Prepare a boat and fire muster list	☐			
.12	Understudy an officer in charge of an abandon ship drill	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

13.2	Task: Launch, handle and recover a lifeboat	Task Completed	Assigned N of Ship	Date	Initials
.1	Assist with preparation and swinging out of lifeboats and be aware of attendant dangers	☐			

.2	Assist with preparation and boarding of free fall lifeboat and be aware of attendant dangers	☐			
.3	Assist with lowering a lifeboat to clear the ship and ride to a sea anchor	☐			
.4	Start and operate a lifeboat engine	☐			
.5	Understand principles of lifeboat sailing	☐			
.6	Crew a boat under: Oars [ ] Power [ ]	☐			
.7	Cox a boat under: Oars [ ] Power [ ]	☐			
.8	Assist with recovery and securing of a lifeboat	☐			
.9	Assist with recovery and securing of a free fall lifeboat	☐			
13.3	**Task: Launch or throw overboard a life raft, and manoeuvre it clear of ship's side**				
.1	Demonstrate an understanding of the procedure for launching and inflating life rafts, if the opportunity arises	☐			
13.4	**Task: Operate radio life-saving appliances**				
.1	Rig and operate the portable lifeboat radio under supervision	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

13.5	Task: Ensure that all required equipment on board a rescue craft is functioning and maintained as specified in the SOLAS Training Manual	Task Completed	Assigned N of Ship	Date	Initials
.1	Demonstrate an understanding of statutory equipment required in survival craft and its correct use	☐			
.2	State minimum food and water requirements for occupants of survival craft	☐			
.3	Locate, explain and understand the operation of distress rockets, flares and other pyrotechnics including precautions for their disposal	☐			
.4	Explain the operation of rocket line throwing apparatus	☐			
.5	Assist with the maintenance of: Lifeboats and rescue boats	☐			
.6	Lifeboat equipment and provisions	☐			
.7	Launching davits and gear	☐			
.8	Buoyant apparatus, e.g. lifebuoys, lifejackets and attachments	☐			
.9	Immersion suits and TPAs	☐			
.10	Other survival craft, specify type …….	☐			
.11	Assist with the routine maintenance of a lifeboat engine	☐			
		Competence Achieved: YES NO			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

14.	**Competence: Apply medical first aid on board ship**				
14.1	**Task: Stop excessive bleeding, ensure breathing and put casualties in proper recovery position**	Task Completed	Assigned N of Ship	Date	Initials
.1	Participate in an emergency first aid drill at sea	☐			
.2	Demonstrate a basic understanding of first aid principles: Stopping bleeding	☐			
.3	Treatment of suffocation/drowning	☐			
.4	Placing casualty in the recovery position	☐			
14.2	**Task: Detect signs of shock and heat stroke and act accordingly**				
.1	Demonstrate how to handle a casualty in shock	☐			
.2	Demonstrate procedure for dealing with heat stroke	☐			

14.3	Task: Treat burns, scolds, fractures and hypothermia				
.1	State procedure for dealing with a casualty of electric shock	☐			
.2	Demonstrate procedure for treating burns	☐			
.3	Demonstrate procedure for treating minor fractures	☐			
.4	State procedure for avoiding hypothermia	☐			
.5	Demonstrate procedure for treating casualty with hypothermia	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

15.	Competence: Monitor compliance with legislative requirements				
15.1	**Task: State where laws, rules and regulations concerning ship operation and pollution-prevention are available**	Task Completed	Assigned N of Ship	Date	Initials
.1	Locate on board copies of: SOLAS	☐			
.2	MARPOL	☐			
.3	Garbage Record Book	☐			
.4	Locate copies of certificates issued under SOLAS, MARPOL, Load Line, STCW and ILO Conventions, and other regulations	☐			

15.2	**Task: Use legislation to ascertain due approach to solve questions encountered during on board operations**				
.1	Participate in bilge pumping in compliance with MARPOL	☐			
.2	Dispose of garbage at sea/on shore in compliance with MARPOL and ship's Garbage Management Plan	☐			
.3	Assist in checking life-saving equipment prior to Safety Equipment Survey	☐			
.4	Participate in sludge pumping in to shore facility in compliance with MARPOL	☐			
15.3	**Task: Searching for stowaways**				
.1	Carry out a stowaway search	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	**Competence Achieved: YES NO** **Verified by On Board Training supervisor or Responsible person.** **Full name:** **Signature:** **Date:**

16.	Competence: Application of leadership and teamworking skills				
16.1	**Task: Play a team role**	Task Completed	Assigned N of Ship	Date	Initials
.1	Understand that as a team member everyone has different experience and has a role to play in any task	☐			
.2	Participate actively in task planning meetings involving different ranks	☐			
.3	Understand that communication is a two-way exchange and demonstrate this in practice both on the Engine room to bridge and Engine room to deck	☐			
.4	Maintain awareness of changing situations	☐			
.5	Accept authority while questioning instructions if in doubt	☐			
.6	Check own understanding of situation is shared by other team member	☐			
.7	Participate actively in task review and evaluation meetings involving different ranks	☐			
16.2	**Task: Demonstrate leadership ability**				
.1	Think ahead and plan tasks that will follow the immediate task or manoeuvre	☐			
.2	Set priorities correctly when observing conflict between immediate needs and tasks that may be held back	☐			
.3	Allocate resources effectively to achieve desired outcomes	☐			
.4	Check results and take corrective actions as needed/instructed	☐			
.5	Demonstrate the confidence and maturity to refer to senior officer if in doubt	☐			

On Board Training Supervisors' General advices on areas of improvement (Please indicate Item Number and your recommendations):	Competence Achieved: YES NO Verified by On Board Training supervisor or Responsible person. Full name: Signature: Date:

PART 9 Cadet's Performance Evaluation

Responsible training supervisor or the master shall evaluate the cadet's performance during the cadetship program On Board.

Following marks shall be used for evaluation:**1 – Excellent / 2 – Good / 3 – Satisfactory / 4 - Poor**							
No	***Cadet's Performance***	**Ship's Name**					
1	*Safety – Security awareness*	☐	☐	☐	☐	☐	☐
2	*Discipline, Time Management*	☐	☐	☐	☐	☐	☐
3	*Responsibility, Integrity*	☐	☐	☐	☐	☐	☐
4	*Ability to work in a Team*	☐	☐	☐	☐	☐	☐
5	*Personal Cleanliness*	☐	☐	☐	☐	☐	☐
6	*Motivation*	☐	☐	☐	☐	☐	☐
7	*Completion of tasks / Cadet's Training Record Book*	☐	☐	☐	☐	☐	☐
8	*Practical Skills*	☐	☐	☐	☐	☐	☐
9	*Theoretical knowledge*	☐	☐	☐	☐	☐	☐
10	*English Knowledge*	☐	☐	☐	☐	☐	☐
Additional Remarks:		**Evaluation done by:**					
		Officer's Name / Surname / Position					
		Signature:	**Date:**				

PART 10: - PROJECT WORKS

INTRODUCTION

The purpose of carrying out projects during sea service is to ensure that you gain a knowledge progressively of the ships in accordance with requirements of STCW convention.

To achieve this objective successfully will require intelligent observation, initiative and reference, where appropriate, to ships' plans and other data, besides manufacturers' instructions and operational manuals. It will, moreover, be essential in a number of cases to seek the help and guidance of your officers in

The technical accuracy of each project will be checked by the Chief Engineer and will be evaluated by Training Supervisor or other responsible person of your Maritime Institution. The evaluation will look for:

(a) Accuracy of information in written text, illustrations or calculations;

(b) Coverage of subject showing depth of research and logical presentation of facts;

(d) Spelling and grammar.

INSTRUCTIONS:

1. Before commencing each project the topics shall be agreed with Training Supervisor or dedicated person of maritime University; the type of information required, i.e., written, written with illustration, or an illustration shall be determined in advance
2. Begin each project on a separate file and state the Name of Ship, Project Title, Date Commenced and Date Completed.
3. Project shall be completed in electronic form, using Microsoft Word or similar computer program that provides text editing. Use 11pt regular font size. Illustrations and drawings shall be scanned or electronically edited and attached to project in separate file. List of Attachment's shall be provided. Neatness of scanned materials is required. The amount of Each project work shall not be of less than 3 pages, not including graphics.
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 must be recorded on CD Disc or other portable device and submitted to Training Supervisor or dedicated person of maritime University for evaluation. Maritime university may require the cadet to represent and describe the project for proper assessment.

CONTENT:

Student shall prepare comprehensive project work concerning one particular area of each Functions: Marine Engineering, Electrical, electronic and control engineering, Maintenance and repair, Controlling the operation of the ship and care for persons on board.

Title, Contends, Summary and Outcome of Individual Project works shall be discussed with Training Supervisor before commencement of Seagoing practice and recorded in Training Record Book.

Particular topics (Titles) of Project works should be selected from following general areas of Competence:

Task 1: Pipe Systems Trace and make line diagrams of the following pipe systems. Use the correct symbols to show on the appropriate diagrams: valves (NRV, SDNR, etc.) remote or emergency controls and other arrangements. Identify pressure relief valves, bursting discs, drains, air cocks, filter units, sounding arrangements and vent pipes.

1.1. Main sea water system

1.2. Bilge, including OWS and emergency bilge pumping arrangements

1.3. Fire main

1.4. Fuel-transfer system, (HFO and MDO), Indicate the types of valves, pumps and filters fitted.

1.5. Auxiliary steam

1.6. Main steam

1.7. Feed-water

1.8. Domestic fresh water

1.9. Cooling FW System (high temperature, low temperature) Indicate the types of valves, pumps, Coolers and filters fitted.

1.10. Main engine fuel oily system. Indicate the types of valves, pumps and filters fitted. Show, with the aid of a diagram, the general Fuel oil distribution.

1.11. Auxiliary engine fuel oil system. Indicate the types of valves, pumps and filters fitted. Show, with the aid of a diagram, the general Fuel oil distribution.

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

1.13. Compressed air systems for engine room and deck services

1.14. Drain valves

1.15. Air cocks

1.16. Domestic refrigeration system

1.17. Sewage system

1.18. Auxiliary steam

1.19. Ballast

Task2: Scale Drawings Draw approximately to scale:

2.1. A longitudinal section through the centre line of your ship showing and naming cargo holds (tanks), bunker, ballast and all other compartments/spaces,

2.2 A plan of each of the decks showing and naming accommodation, store rooms etc.

Task3: Safety On the plan of machinery spaces drawn above:

3.1 Show the position by key letters of each type of life-saving and fire-fighting equipment,

3.2 List the above key letters used in (a) and alongside each one give a brief description of each item.

Task 4: Protection of the Marine Environment Summaries the company's policy on environmental protection

4.1 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.

Evaluation of project work by Training Supervisor from METI

Given Assignments on project work

Following marks shall be used for evaluation:**1 – Excellent / 2 – Good / 3 – Satisfactory / 4 - Poor**			
No	**Name Given Assignments on project work**	**Evaluation**	**Comments**
1		☐	
2		☐	
3		☐	
4		☐	
5		☐	
6		☐	
7		☐	
8		☐	
9		☐	
10		☐	
		☐	
		☐	
		☐	

		☐	
		☐	
		☐	
General Remarks/Comments:		**Evaluation done by:**	
		Name / Surname / Position	
		Signature:	**Date:**