





ITU MARITIME FACULTY



DEPARTMENT OF MARINE ENGINEERING

ONBOARD TRAINING RECORD BOOK

İSTANBUL TEKNİK ÜNİVERSİTESİ DENİZCİLİK FAKÜLTESİ 34940
TUZLA/İSTANBUL - TURKEY

	<p style="text-align: center;">ISTANBUL TECHNICAL UNIVERSITY MARITIME FACULTY ONBOARD TRAINING RECORD BOOK FOR MARINE ENGINEERING CADETS</p>				
	Revision No:	03	Revision Date:	28.10.2015	

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(ADMINISTRATION APPROVAL)



**ISTANBUL TECHNICAL UNIVERSITY
MARITIME FACULTY
ONBOARD TRAINING RECORD BOOK
FOR MARINE ENGINEERING CADETS**



Revision No:

03



Revision Date:

28.10.2015

PHOTO

Full Name:	
Seamen's Registration Number:	
Student Number:	
Date of Birth:	
Permanent address:	
Tel:	
E-mail:	
Date training started:	

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SECTION 1. INTRODUCTION



The aim of onboard training program (OTP) is to develop a Cadet's understanding of the technical, practical and social characteristics required of a highly trained professional in the maritime industry. This purpose is achieved by placing the Cadet in an actual on-the-job marine environment (both aboard ship and ashore) under normal work conditions and guided by stringent practical and academic requirements. All the contents of OTRB specifically designed to meet the requirements of the STCW CONVENTION 1978, as amended 2010.

The aim of the practical training is for trainees to:

- gain experience in relevant aspects of shipboard activities as they occur on board the ship or ships on which the trainee is sailing;
- test and compare the knowledge acquired at school with the daily practice on board;
- consolidate and expand theoretical knowledge;
- build a practical basis to achieve the standards of competence in accordance with the standards of competence specified in section A-III/1, paragraphs 1 to 7, section A-III/3, paragraphs 1 to 6, section A-III/4, paragraphs 1 to 4, section A-III/5, paragraphs 1 to 3, section A-VI/1, paragraph 2, section A-VI/2, paragraphs 1 to 4, section A-VI/3, paragraphs 1 to 4, section A-VI/4, paragraphs 1 to 3 and standards regarding watchkeeping specified in section A-VIII/2, part 4-1 and the guidance regarding the training programme stated in section B-III/1 of the STCW Code.
- prepare for a future position on board.

1.1 GUIDANCE FOR ONBOARD INSTRUCTORS/SUPERVISING ENGINEERS

1. The instructor should review the OTRB to identify what training the candidate has already completed, and what training remains to be conducted.
2. The instructor should have clear, measurable, training objectives. These should be organized by reference to other related skills and abilities needed by the student to achieve the level of competence being pursued. The training objectives should be approved by the responsible person supervising the training and assessment program.
3. The instructor should conduct training only when the necessary equipment is operational and will be available throughout the training exercise.
4. The instructor should follow an outline, checklist, or training plan which organizes information and instructional activities in a logical and progressive manner.
5. The instructor should ensure the candidate has sufficient opportunities to observe the skill or ability being properly performed. When the skill or ability requires the use of certain shipboard equipment, the instructor should ensure that the candidate is given adequate opportunities for hands-on use of that equipment along with constructive comments directing the candidate to preferred or proper ways of using the equipment.
6. Instruction should include explanations of misuse or improper procedure; problems that may be encountered and proper corrective actions to take; and descriptions of important differences which may exist from ship to ship.
7. The following guidelines are taken from section B-III/1 of the STCW Code for the conduct of assessment and should be taken into account:
 - a. The scope of knowledge is implicit in the concept of competence. Assessment of competence should, therefore, encompass more than the immediate technical requirements of the job, the skills and tasks to be performed, and should reflect the broader aspects needed to meet the full expectations of competent performance as a ship's officer. This includes relevant knowledge, theory principles, and cognitive skills which, to varying degrees, underpin all levels of competence. It also encompasses proficiency in what to do, how and when to do it, and why it should be done. Properly applied, this will help to ensure that a candidate can:
 - i. work competently in different ships and across a range of circumstances;
 - ii. anticipate, prepare for, and deal with contingencies; and
 - iii. adapt to new and changing requirements.
 - b. The criteria for evaluating competence (column 4 of table A-III/1 of the STCW Code) identify primarily in outcome terms the essential aspects of competent performance. They are expressed so that assessment of a candidate's performance can be made against them and should be adequately documented in the training record book.

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c. Evaluation of competence is the process of:

- i. collecting sufficient valid and reliable evidence about the candidate's knowledge, understanding and proficiency to accomplish the tasks, duties and responsibilities listed in column 1 of table A-III/1; and
- ii. judging that evidence against the criteria specified in the standard.

d. The arrangements for evaluating competence should be designed to take account of different methods of assessment which can provide different types of evidence about the candidate's competence, e.g.:

- i. direct observation of work activities (including seagoing service);
- ii. skills/proficiency/competency tests;
- iii. projects and assignments;
- iv. evidence from previous experience; and
- v. written, oral and computer-based questioning techniques.

8. The instructor should continuously observe the cadet during performance of the skill or ability and should only note in the training record book when the performance is acceptable. In the event the candidate does not perform a critical phase of the assessment exercise at an acceptable level of proficiency, assessment should be suspended and should not be conducted until further instruction is provided.

9. Successful or acceptable performance should be based on the cadet's proved ability to safely perform:



- a. the assigned tasks in accordance with competency criteria identified in the OTB;
- b. such tasks in a manner which demonstrates that the required level of skill, knowledge and ability was never in serious doubt; and
- c. such tasks in a manner which demonstrates sound and professional judgment.

10. Unsuccessful or unacceptable performance may be based on the cadet's failure to prove his/her ability in accordance with paragraph 8, or because the candidate otherwise performs improperly in the judgment of the assessor, based on events such as the following:

- a. an action, or lack of action, by the candidate which required corrective action or intervention by the assessor to prevent injury, damage, or the development of a hazardous condition;
- b. the candidate failed to use proper procedures (including appropriate communication procedures);
- c. the candidate failed to take prompt corrective action when required.

1.2 GUIDANCE FOR OTRB

1. The cadet is personally responsible for completion of the OTRB during his/her whole sea service on different ships.
2. Immediately after joining each ship, the cadet should:
 - i. start with ship's familiarization and safety tasks,
 - ii. record the particulars of the ship.
3. The cadet should complete the tasks laid down in the OTRB and obtain the shipboard supervising officer's signature.
4. The shipboard supervising officer are designated by chief engineer from on board engineers.
5. It is not necessary to complete all tasks on one ship. It can be done on subsequent ships.
6. The cadet has a right to fulfil the tasks more than once. The decision to repeat the task depends on the shipboard supervising engineer.
7. After the confirmation of each task done by the supervising engineer or chief engineer, OTRB and enclosed "Training Record Assessment Sheet" should be approved by chief engineer before leaving the ship.
8. Every pages for hand written assignments (Section 8) must be signed and official stamped by chief engineer. If needed, the cadet can add official stamped empty pages for hand written assignments.

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SECTION 2. SUMMARY RECORD OF ONBOARD TRAINING

2.1 Certificates Achieved

Type of Certificate of Proficiency	Number/Date of expiry



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Type of Certificate of Proficiency	Number/Date of expiry

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2.2 Shipboard Service Record

	Ship IMO Number	Dates		Time Spent on Engine Watchkeeping Duties		Total Seagoing Service		Signature of Master Official Ship's Stamp
		Sign On	Sign Off	Months	Days	Months	Days	
1								
2								
3								
4								
Total Seagoing Service (This part is filled by ITUMF Sea Training Office)								

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2.3 Chief Engineer's Review of Training Progress

	Ship Name IMO Number	Date	Comments	Name Signature
1				
2				
3				
4				

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2.4 Company's Inspection of Onboard Training Book



	Ship Name			Name
	IMO Number	Date	Comments	Signature
1				
2				
3				
4				

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SECTION 3. SHIP'S PARTICULARS

Ship Name: _____ IMO Number: _____ Call Sign: _____

General Information		Main Engine	
Gross tonnage	t	Engine (make/type)	
Net tonnage	t	Stroke / Bore	
Length overall	m	Output power	bhp/kw
Breadth	m	Turbocharger	
Depth	m	Reduction gear type	
Summer draught	m	Waste heat recovery type	
Summer freeboard	m	Engine fuel type/cons.	/ t/d
Deadweight	t	Viscosity	cSt at °C
Light displacement	t	Auxiliary boilers	
Grain/liquid capacity	m ³	Boiler working pressure	kg/m ² or bar
Life-saving Equipment		Auxiliaries	
Lifeboats (no.)		Generators (type/make)	
Liferafts (no.)		Output	kw
Capacity per boat	(persons)	Fuel type /cons.	/ t/d
Capacity per liferaft	(persons)	Purifiers (type/make/cap.)	LO
EEBDs (no./type)			HFO
Fire-fighting Equipment		MDO	
Fire extinguishers (no./cap.)		OWS (type/make)	
Water: litres	Foam: litres	FWG (type/make)	
Dry powder: kg	CO ₂ : kg	Deck Machinery	
Fire hoses (no./ size)		Steering gear (type)	
ER fixed fire-fighting system		Cranes (no./SWL)	

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2nd Ship

Ship's Name:

IMO Number:

Call Sign:

General Information		Main Engine	
Gross tonnage	t	Engine (make/type)	
Net tonnage	t	Stroke / Bore	
Length overall	m	Output power	bhp/kw
Breadth	m	Turbocharger	
Depth	m	Reduction gear type	
Summer draught	m	Waste heat recovery type	
Summer freeboard	m	Engine fuel type/cons.	/ t/d
Deadweight	t	Viscosity	cSt at °C
Light displacement	t	Auxiliary boilers	
Grain/liquid capacity	m ³	Boiler working pressure	kg/m ² or bar
Life-saving Equipment		Auxiliaries	
Lifeboats (no.)		Generators (type/make)	
Liferafts (no.)		Output	kw
Capacity per boat	(persons)	Fuel type /cons.	/ t/d
Capacity per liferaft	(persons)	Purifiers (type/make/cap.)	LO
EEBDs (no./type)			HFO
Fire-fighting Equipment			MDO
Fire extinguishers (no./cap.)		OWS (type/make)	
Water: litres	Foam: litres	FWG (type/make)	
Dry powder: kg	CO ₂ : kg	Deck Machinery	
Fire hoses (no./ size)		Steering gear (type)	
ER fixed fire-fighting system		Cranes (no./SWL)	

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3th Ship

Ship's Name:

IMO Number:

Call Sign:

General Information		Main Engine	
Gross tonnage	t	Engine (make/type)	
Net tonnage	t	Stroke / Bore	
Length overall	m	Output power	bhp/kw
Breadth	m	Turbocharger	
Depth	m	Reduction gear type	
Summer draught	m	Waste heat recovery type	
Summer freeboard	m	Engine fuel type/cons.	/ t/d
Deadweight	t	Viscosity	cSt at °C
Light displacement	t	Auxiliary boilers	
Grain/liquid capacity	m ³	Boiler working pressure	kg/m ² or bar
Life-saving Equipment		Auxiliaries	
Lifeboats (no.)		Generators (type/make)	
Liferafts (no.)		Output	kw
Capacity per boat	(persons)	Fuel type /cons.	/ t/d
Capacity per liferaft	(persons)	Purifiers (type/make/cap.)	LO
EEBDs (no./type)			HFO
Fire-fighting Equipment		MDO	
Fire extinguishers (no./cap.)		OWS (type/make)	
Water: litres	Foam: litres	FWG (type/make)	
Dry powder: kg	CO ₂ : kg	Deck Machinery	
Fire hoses (no./ size)		Steering gear (type)	
ER fixed fire-fighting system		Cranes (no./SWL)	

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4th Ship

Ship's Name:

IMO Number:

Call Sign:

General Information		Main Engine	
Gross tonnage	t	Engine (make/type)	
Net tonnage	t	Stroke / Bore	
Length overall	m	Output power	bhp/kw
Breadth	m	Turbocharger	
Depth	m	Reduction gear type	
Summer draught	m	Waste heat recovery type	
Summer freeboard	m	Engine fuel type/cons.	/ t/d
Deadweight	t	Viscosity	cSt at °C
Light displacement	t	Auxiliary boilers	
Grain/liquid capacity	m ³	Boiler working pressure	kg/m ² or bar
Life-saving Equipment		Auxiliaries	
Lifeboats (no.)		Generators (type/make)	
Liferafts (no.)		Output	kw
Capacity per boat	(persons)	Fuel type /cons.	/ t/d
Capacity per liferaft	(persons)	Purifiers (type/make/cap.)	LO
EEBDs (no./type)			HFO
Fire-fighting Equipment		MDO	
Fire extinguishers (no./cap.)		OWS (type/make)	
Water: litres	Foam: litres	FWG (type/make)	
Dry powder: kg	CO ₂ : kg	Deck Machinery	
Fire hoses (no./ size)		Steering gear (type)	
ER fixed fire-fighting system		Cranes (no./SWL)	



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SECTION 4. MANDATORY SAFETY AND ONBOARD FAMILIARIZATION

4.1 Safety Familiarization As Required by STCW Code

Every crewmember before being assigned to onboard duties must receive safety familiarization to know what to do in emergency as required by *section A-VI /1paragraph 1 of the STCW Code*. The master or responsible officer must confirm the completion of following training on each ship.

Tasks and duties	1st Ship	2nd Ship	3th Ship	4th Ship
	Officer's signature, date	Officer's signature, date	Officer's signature, date	Officer's signature, date
Is able to communicate with other person on board on elementary safety matter.				
Understands safety information symbols, signs and alarm signals.				
Knows what to do if: A person falls overboard, Fire or smoke is detected, The fire or abandon ship alarm is sounded				
Is able to identify muster and embarkation station, emergency escape routes and emergency exits.				
Is able to locate and don life jacket.				
Is able to raise the fire alarm and has a basic knowledge of the use of portable fire-extinguishers.				
Is able to take immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board.				
Is able to close and open the fire, weathertight and watertight doors fitted in the particular ship, other than those for hull openings.				

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4.2 Boat and Fire Muster Station and Other Details- insert in The Appropriate Space

	<i>Ship's name</i> IMO Number	<i>Boat</i> <i>Muster Station</i>	<i>Fire</i> <i>Muster Station</i>	<i>Master's name</i> BLOCK CAPITALS	<i>Master's</i> <i>signature</i>	<i>Date</i>
1						
2						
3						
4						



REMARKS:

4.3 Onboard Familiarization As Required by Section 1/14 STCW Convention

<i>Tasks and duties</i>	1st Ship	2nd Ship	3th Ship	4th Ship
	Officer's signature, date	Officer's signature, date	Officer's signature, date	Officer's signature, date
Knowledge of engine room and other work areas.				
Knowledge of main and auxiliary engines and other engine room equipment and displays.				
Operate, under supervision, equipment, plant and machinery to used in routine duties				
Read and demonstrated an understanding of Company's Fire and Safety Regulation.				
Demonstrate recognition of the alarm signals for: FIRE, GENERAL EMERGENCY ALARM, ABANDON SHIP				



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Tasks and duties	1st Ship	2nd Ship	3th Ship	4th Ship
	Officer's signature, date	Officer's signature, date	Officer's signature, date	Officer's signature, date
Know location of: Engine room first aid equipment.				
Emergency Escape Breathing Devices for machinery space and accommodation.				
Distress rockets, flares and other pyrotechnics.				
Rocket line throwing apparatus.				
Fire-fighting equipment, alarm activating points, alarm bells, extinguishers, hydrants, fire-axes and hoses.				
Breathing apparatus and other fire-fighting equipment.				
Deck stop mechanism for main engines including other emergency stop valves and understands its operation in emergency.				
CO ₂ bottle room, and control valves for smothering apparatus in pump rooms, cargo tanks and holds.				
Emergency pump and understands the operation of it.				
EPIRB, SART and portable radios for use in emergency.				
Is familiar with: The procedures for garbage management, rubbish and other wastes.				
The use of garbage compactor or other equipment as appropriate.				
Handling of oily bilge water and oil wastes.				

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SECTION 5. WORKPLACE SAFETY



No	Training tasks and duties	Assignment Completed	
		Date	Chief Eng. Signature
1.	Describe the system of permits to work onboard		
2.	List the items to be checked in a work permit		
3.	List the items to be checked in a hot work permit		
4.	Describe an enclosed space		
5.	Describe the procedures to enter an enclosed space		
6.	Explain the use of gas analysis instruments to be used prior to entering:		
	Fuel oil tanks		
	Ballast tanks		
	Void spaces		
7.	Describe the procedure adopted on finding someone overcome as a result of:		
	Electric shock		
	Gassing incident in an enclosed space		
8.	Describe special safety precautions in dry dock (if any)		
9.	Demonstrate an understanding of safe working practices for use of welding and cutting equipment		

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SECTION 6. TRAINING TASKS AND DUTIES CHECKLIST

Main purpose of this section is to ensure that engine cadet get knowledge about all required areas which are indicated at STCW Convention. In this framework training tasks and duties were determined for cadet to perform. First engineer confirms cadet's successful completion of his/her duties with writing the completion date and sign the signature box.

No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
1. Safe Engineering Watch			
1.1	Learn procedures of handling over a watch		
1.2	Learn procedures of taking over a watch		
1.3	Assist watchkeeping engineer officer on:		
	Routine watchkeeping duties, checking the correct functioning of all control and monitoring systems		
	Routine checks of correct water levels in machinery space		
	Main engine scavenge drains blow down		
	Check compressed air automatic drains		
	Check high pressure fuel pipes sheathing		
	Air side cleaning of the turbocharger		
	Boiler water tests and treatment		
	Check heating coils returns and other sources of contaminated feedwater		
	Correct operation of the boiler		
	Soot-blowing operation		
	Check all air receiver drains		
1.4	Corrective action during emergency drills		
	Fire drill		
	Abandon ship drill		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
	Black out drill		
1.5	Learn to switch and use of main engine local control and emergency maneuvering; and return procedures to normal running		
1.6	Learn emergency steering gear operation		
1.7	Learn how to reset and restart the machinery after a failure		
1.8	Change over to the stand by system of		
	Generators		
	Main engine system pumps		
	Steering gear		
1.9	Learn how to fill		
	Engine room log book		
	Oil record book		
	Ozone depleting substances record book		
	Alarm record book		
2. Use English in written and oral form			
2.1	Assist with completion of ship's planned maintenance system records in English		
2.2	Demonstrate correct use of English language at routine operations and emergency drills		
3. Use internal communication systems			
3.1	Learn how to use ship's internal phone system		
3.2	Learn how to use internal message system, if any		
3.3	Learn how to use hand held transceivers and correct station ID procedure		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
4. Operation of main and auxiliary machinery and associated control systems			
4.1	Learn to prepare and test the steering gear and telegraphs		
4.2	Learn how to communicate between bridge when arrival to port or departure from port		
4.3	Learn to prepare starting air system for departure		
4.4	Learn to prepare main and auxiliary machinery for departure		
4.5	Learn to use high level and low level sea suction		
4.6	Learn to start main engine from local and remote control positions		
4.7	Learn manually operate main compressor and change over to automatic running mode		
4.8	Learn how to respond to instructions from the bridge and operate the main engine controls during the maneuvering		
4.9	Learn how to do water wash exhaust side main engine turbocharger		
4.10	Learn to adjust main engine and auxiliary machinery for continuous running		
4.11	Learn to prepare and operate an evaporator/fresh water generator		
4.12	Do tests and conditioning for purity and potability of fresh water		
4.13	Check crankcase oil mist detector		
4.14	Check governors		
4.15	Take indicator diagram		
4.16	Carry out routine tests on		
	Engine cooling water		
	Fuel oil		
	Lube oil		



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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
4.17	Learn to shutting down main engine and auxiliary systems after finishing with engines		
4.18	Learn to fill a boiler and raise steam		
4.19	Learn to raise the temperature of main engine fuel oil to the correct level		
4.20	Check the steam line and its components		
4.21	Check the correct boiler condition indicators and alarms		
4.22	Learn the correct procedure for blowing down a boiler gauge glass		
4.23	Learn to start up and operate ship's refrigeration plant		
4.24	Learn to make up brine, if appropriate		
4.25	Check density of the brine		
4.26	Learn to shut down refrigeration and AC plant		
4.27	Learn to do refrigerant charging		
4.28	Learn to carry out refrigerant gases leak detection		
4.29	Learn about pressure tank safety devices		
4.30	Learn to operate of sewage system		
4.31	Learn to operate incinerator		
4.32	Learn to operate shredder/compactor, if any		
5. Operation of fuel, lubrication, ballast and other pumping systems and associated control systems			
5.1	Learn to operate oily water separator (OWS)		
5.2	Assist with planning ballast water management operations		
5.3	Assist to engineer officers when		
	Bunkering		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
	Fuel transfer from bunker tanks to service tanks		
5.4	Drain water or sludge from settling tanks		
5.5	Learn how to start and operate fuel oil purifiers		
5.6	Learn about Emissions Control Areas (ECA)		
5.7	Assist to engineer officers at change over from heavy fuel oil to marine diesel oil or vice versa		
5.8	Learn how to start and operate lube oil purifiers		
5.9	Do routine checks to maintain lube oil system tanks at the correct levels		
5.10	Learn to operate an oil discharge monitor (in tankers)		
5.11	Learn about all pollution prevention requirements		
5.12	Learn to assemble, clean up, and reassemble OWS unit		
5.13	Assist to engineer watchkeeping officer when ballasting and deballasting		
5.14	Learn to do the emergency arrangements for emptying engine room bilges		
6. Operation of electrical, electronic and control systems			
6.1	Learn to use ship's system, circuit and wiring diagrams to identify circuit components		
6.2	Get knowledge about symbols used on electric circuit diagram		
6.3	Get knowledge about the location of major control and protection devices within the distribution circuit		
6.4	Learn shore power connection locations, and the procedures for connection/disconnection		
6.5	Learn the pre-start checks and tests on electrical equipment and control systems		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
6.6	Learn to start electrical equipment in manual and remote modes		
6.7	Learn the system trips and how to reset		
	Over current		
	Reverse power		
	Low frequency		
6.8	Check efficiency of sheathing on high pressure fuel pipes and leak-off indicators		
6.9	Learn how to parallel and put on load generators, including shaft generators and emergency generators		
6.10	Learn how to adjust the load share of generators running in parallel		
6.11	Learn how to remove the load from a generator running in parallel, stop and shut down		
6.12	Learn the safety features in the power distribution system which protect alternators		
6.13	Learn the starting methods for electric motors		
6.14	Learn to start up and operate a high capacity pump		
6.15	Learn about the protective switch gear associated with high voltage installations		
6.16	Learn about the ship's permit to work system concerning electrical equipment		
6.17	Assist to engineer watchkeeping officer at routine checks and tests on electronic equipment		
6.18	Get knowledge about symbols used on electronic circuit diagram		
6.19	Get knowledge about the characteristics of basic electronic circuit elements		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
6.20	Get knowledge about process signal symbols and terminology used with control system diagrams		
6.21	Assist to engineer watchkeeping officer at routine checks and tests on electronic equipment control systems		
6.22	Learn the functions, characteristics and features of the control system for		
	Main engine		
	Steam boiler		
	Steering gear		
6.23	Learn the difference in control system for heating, ventilation and air conditioning systems		
6.24	Learn the function of a PLC-based controller, identifying pre-set and adjustable parameters		
6.25	Learn about PID control characteristics and associated system devices		
7. Electrical and electronic equipment repair and maintenance			
7.1	Learn to apply safety measures, isolate and lock out electrical equipment		
7.2	Learn to safe use of electrical equipment for testing and maintenance in hazardous areas		
7.3	Learn about safe working practices and procedures including use of appropriate clothing for		
	Use of power operated tools		
	Entry into closed spaces with electrical equipment		
	Work on electrical switchboards		
	Use of lifting gear		
	Work within refrigeration machinery spaces		
	Work on electrical machinery		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
7.4	Learn about the precautions to be taken when testing the insulation of generator cables and wiring connected to an automatic voltage regulator (AVR) unit		
7.5	Learn about main switchboard and control room console layouts		
7.6	Learn about the vessel's emergency power requirements		
7.7	Assist to engineer watchkeeping officer/electric-electronic officer with main switchboard routine maintenance of contacts connections		
7.8	Learn about the procedure to split the main switchboard		
7.9	Learn about the switchboard instrumentation and safe working practices associated with its maintenance		
7.10	Assist to engineer watchkeeping officer/electric-electronic officer with measuring the insulation resistance of a generator		
7.11	Learn to carry out insulation tests on a motor using a Megger		
7.12	Assist to engineer watchkeeping officer/electric-electronic officer with the maintenance of a starter		
7.13	Learn to carry out routine testing and maintenance on emergency storage batteries		
7.14	Learn to carry out Megger testing for insulation resistance and continuity testing		
7.15	Assist to engineer watchkeeping officer/electric-electronic officer with fault finding on electrical equipment control systems		
7.16	Assist to engineer watchkeeping officer/electric-electronic officer with tracing earth faults		
7.17	Learn to isolate and lock out associated equipment when engaged in repair or maintenance work		
7.18	Learn to carry out routine testing and maintenance on alarm systems		
7.19	Assist to engineer watchkeeping officer/electric-electronic officer with fault finding on ship's lightning circuits and component testing		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
7.20	Assist to engineer watchkeeping officer/electric-electronic officer with repairing or replacing various types of accommodation lights, cargo hold and deck flood lights		
7.21	Learn to check and replace defective sensors essential for engine operation		
7.22	Learn to repair or replace		
	Fuses		
	Control lamps		
	Temperature sensors		
	Pressure sensors		
7.23	Learn to carry out routine testing and maintenance on		
	Circuit breakers		
	Tripping mechanisms		
	Motor starters		
	Lights		
8. Use of hand tools, machine tools and measuring instruments			
8.1	Learn temporary repair to leaking pipe		
8.2	Learn about safe working practices and procedures		
	Use of power operated tools		
	Machine tools		
	Welding equipment		
	Wear appropriate personal protective equipment		
8.3	Learn how to use correctly various types of sealants and packings		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
9. Maintenance and repair of shipboard machinery and equipment			
9.1	Learn about the ship's planned maintenance system		
9.2	Learn about manufacturers' instructions and drawings for use in maintenance tasks		
9.3	Assist with input to the ship's planned maintenance system		
9.4	Learn how items of spare gear are stored and maintained in good condition		
9.5	Learn about special precautions to be taken for repair and maintenance work in hazardous areas		
9.6	Learn about safe working practices and procedures for		
	Use of portable power operated tools		
	Entry into enclosed spaces		
	Work beneath floor plates		
	Use of lifting gear		
	Moving heavy machinery		
	Disposal of oily waste materials		
	Use of appropriate protective clothing		
	Working at height		
	Manual lifting and carrying		
9.7	Learn to take and log readings of crankshaft deflections of main and auxiliary engines		
9.8	Learn to change, inspect, check condition, wear and clearance, overhaul and test of following components of main and auxiliary engines		
	Inlet valves		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
	Fuel injection valves		
	Air start valves		
	Relief valves		
	Exhaust valves		
	Fuel pumps		
	Camshafts		
	Crosshead bearings		
	Fuel oil filters		
	Lube oil filters		
	Air filters		
9.9	Learn to use turning gear		
9.10	Learn to change and/or overhaul the following main and auxiliary engine components		
	Pistons		
	Cylinder heads		
	Turbochargers		
	Top end bearings		
	Bottom end bearings		
	Indicator cocks		
	Main bearings		
	Piston-rod scraper box/stuffing box		
	Crosshead guides		
	Tie bolts		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
	Holding-down bolts and chocks		
9.11	Learn to inspect scavenge trunk and exhaust spaces and report on		
	Scavenge drains		
	Scavenge valves		
9.12	Learn to carry out crankcase inspection		
9.13	Learn to take a boiler out of service		
9.14	Learn to isolate boiler		
9.15	Learn to blow a boiler down		
9.16	Learn to open up a boiler		
9.17	Learn to open up and inspect the following parts of a boiler		
	Safety valves		
	Feed check valves		
	Ancillary valves		
9.18	Learn to overhaul and test water gauge glass and check that passages, cocks and valves		
9.19	Learn to change and overhaul burner		
9.20	Learn to open up and reassemble purifiers/separators for cleaning and maintenance		
9.21	Learn to carry out routine maintenance on a main compressor and its system components		
9.22	Learn to carry out routine maintenance on refrigeration plant		
9.23	Learn to carry out routine maintenance on fresh water generator		
9.24	Learn to open up and overhaul different types of pumps		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
9.25	Learn to overhaul and test different types of valves		
9.26	Learn to carry out routine maintenance on deck machinery		
9.27	Learn to carry out routine maintenance on following emergency equipment		
	Fire flaps		
	ER fire extinguishing system and equipment		
	Remote stops for pumps with overboard discharges		
	Fuel valve trips		
	Breathing apparatus sets and recharging breathing apparatus bottles		
	Survival crafts		
10. Leadership application and teamworking skills			
10.1	Learn that as a team member everyone has different experience and has a role to play in any task		
10.2	Participate actively in task planning meetings involving different tasks		
10.3	Learn to accept authority but not be afraid to question if in doubt		
10.4	Participate actively in task review and evaluation meetings involving different tasks		
10.5	Learn to set priorities correctly when seeing conflict between immediate needs and tasks that may be held back		
10.6	Learn to use resources effectively to achieve successful outcomes		
10.7	Check results and take corrective actions		
10.8	Show your confidence and maturity to refer to senior officer in doubt		
11. Comply with pollution prevention requirements			
11.1	Learn that environmental protection includes both sea and air which are protected by mandatory MARPOL regulations		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
11.2	Learn that marine pollutants must be landed ashore for safe disposal in compliance with MARPOL		
11.3	Learn that there are strict rules about the storage and disposal of oily water mixtures		
11.4	Learn that there are strict rules about disposal of noxious liquid substances		
11.5	Learn that there are strict rules about disposal of harmful substances carried in packaged form		
11.6	Learn that there are strict rules about pollution prevention by sewage		
11.7	Learn that there are strict rules about prevention of pollution by garbage from ships		
11.8	Learn that there are strict rules about air pollution from ships		
11.9	Learn about the impact of SO _x , NO _x , VOC and PM and the reasons of the efforts which are needed to reduce atmospheric pollution		
11.10	Demonstrate agreed and properly planned procedures before bunkering		
	Plug deck scuppers		
	Knowledge of ship's bunkering procedures		
	Participate in bunkering operations		
	Emergency shutdown procedures		
11.11	Participate in an emergency response exercise for controlling spillage of oil or other noxious or toxic substances onboard		
11.12	Participate in drill for clean-up of hazardous spillage		
11.13	Participate in an emergency response exercise for stranding		
11.14	Learn about ship's ballast water management plan		
11.15	Assist to engineer watchkeeping officer with ballasting operation		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
11.16	Get knowledge about requirements of MARPOL and Annexes		
12. Seaworthiness of the ship			
12.1	Learn about the precautions required for		
	Entry into closed spaces		
	Working at height		
	Using power tools		
	Manual lifting and carrying		
12.2	Assist with the opening, closing and securing of hatches, if applicable		
12.3	Assist with the maintenance of watertight doors, ports and hatches		
12.4	Learn to carry out full inventory check of the engine stores		
12.5	Learn to prepare steel plates and other surfaces for protective coating		
12.6	Learn to apply protective coats to appropriate surfaces		
12.7	Ensure about properly stowage and security of all gear, tools, spares etc.		
12.8	Learn to take and record the daily soundings of engine room tanks, bilges and others		
13. Onboard firefighting			
13.1	Learn to use and maintenance of the following		
	Portable foam extinguisher		
	Portable CO ₂ extinguisher		
	Portable dry powder extinguisher		
	Portable water extinguisher		
13.2	Learn to maintain hoses, nozzles and couplings		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
13.3	Do fire patrol duties		
13.4	Carry out fire-fighting equipment inspection		
13.5	Participate in an emergency response exercise for fire at sea and in port		
13.6	Assist with the testing of the following systems, if applicable		
	Fire alarms		
	Fixed automatic sprinklers		
	Fixed steam systems		
	Fixed foam extinguishers		
	Fixed CO ₂ systems		
	Fire flaps and dampers		
	Automatic and manual fire doors		
	Emergency shut off valves, pump stops and main engine stops		
13.7	Learn about the operation of the fixed extinguishing system for the engine room		
13.8	Learn the procedures and precautions required for entry into an enclosed space with fireman's suit		
13.9	Learn the use of self contained breathing apparatus (SCBA)		
13.10	Learn the use of fireman's suit with SCBA		
13.11	Learn the use and location of all engine room safety appliances		
13.12	Learn about all engine room escape routes		
14. Operation of life-saving appliances			
14.1	Learn about the hazards to seafarers of manning life boats for drills and exercises		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
14.2	Learn the operation of on-load release mechanisms		
14.3	Learn about the need of inspection and maintenance of on-load release mechanisms		
14.4	Check the permanent marking on survival craft including the number of occupants		
14.5	Learn the locations and test the operation of the following		
	EPIRBs and SARTs		
	Pyrotechnic distress signals		
14.6	Learn the preparation and swinging out of lifeboats and be aware of potential risks		
14.7	Learn the preparation and boarding of free fall lifeboat and be aware of potential risks		
14.8	Learn the lowering a lifeboat to clear the ship and ride to a sea anchor		
14.9	Learn to start and operate a lifeboat engine		
14.10	Learn the recovering and securing a lifeboat		
14.11	Learn the recovering and securing a free fall lifeboat		
14.12	Learn the procedure for launching and inflating liferafts, if applicable		
14.13	Learn to operate the portable lifeboat radio under supervision		
14.14	Learn about the statutory equipment required in survival craft		
14.15	Learn to use rocket line throwing apparatus		
14.16	Learn to use distress rockets, flares and other pyrotechnics		
14.17	Assist with the maintenance of the following		
	Lifeboats and rescue boats		
	Lifeboat equipment and provisions		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
	Launching davits and gear		
	Buoyant apparatus (lifebuoys, lifejackets)		
	Immersion suits and thermal protective aids		
14.18	Assist to duty engineer officer with the routine maintenance of a lifeboat engine		
15. Onboard medical first aid			
15.1	Participate in an emergency first aid drill		
15.2	Learn about the first aid principles		
	Stopping bleeding		
	Suffocation/drowning treatment		
	Placing casualty in the recovery position		
15.3	Learn how to handle a casualty in shock		
15.4	Learn about the procedures for dealing with heat stroke		
15.5	Learn about the procedure for dealing with a casualty of electric shock		
15.6	Learn about the procedure for treating burns		
15.7	Learn about the procedure for treating minor fractures		
15.8	Learn about the procedures for avoiding hypothermia		
15.9	Learn about the procedures for treating casualty with hypothermia		
16. Compliance with legislative requirements			
16.1	Locate onboard copies of the following		
	SOLAS		
	MARPOL		

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No	Training tasks and duties	Assignment Completed	
		Date	First Engineer Signature
	Shipboard Oil Pollution Emergency Plan (SOPEP)		
	Garbage Record Book		
16.2	Learn about the certificates issued under SOLAS, MARPOL, Load Line, STCW, ILO MLC, and other regulations		
16.3	Participate in engine room oil and oily waste handling operations in compliance with MARPOL		
16.4	Learn to dispose of garbage in compliance with MARPOL and ship's Garbage Management Plan		
16.5	Assist to engineer officers with checking machinery and equipment prior to survey		
16.6	Learn to carry out a stowaway search		

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SECTION 7. HAND WRITTEN ASSIGNMENTS ABOUT DAILY TASKS AND DUTIES

Main purpose of this section is to give understanding to the cadets about onboard machinery, equipment, systems, engine room operations, and procedures at emergency situations which are listed below:

- Main engine operations
- Generator operations
- Boiler operations
- Auxiliary machinery operations
- Deck machinery operations
- Electrical, electronic and automation systems and equipment
- Hydraulic and pneumatic systems
- Firefighting systems and equipment
- Life-saving appliances
- Medical first aid procedures
- Drills

The Cadet should use "**Cadet's Observations and Learning Practical Experience Record**" sheet which is illustrated in following pages for each task or duty.

The assignments on this record shall constitute the critical steps, sequence of actions and his/her understandings from each task or duty that is indicated in "Section 7".

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Chapter 2.1 Maintenance, operation and information about main engine (Diesel, Steam Turbine or Gas Turbine).

- 2.1.1 Give information about main engine.
- 2.1.2 Describe maintenance, repair and routine operations of main engine, give information about removal tools and measuring equipment.
- 2.1.3 Describe routine operations of main engine control systems (Maneuvering System, Governor, Oil Mist Detector, Speed, Pressure and Temperature Limits etc.).

Chapter 2.2 Maintenance, operation and information about generators (Diesel, Steam Turbine, Shaft Generator).

- 2.2.1 Give information about generators.
- 2.2.2 Describe maintenance, repair and routine operations of generator, give information about removal tools and measuring equipment.
- 2.2.3 Describe routine operations of generator control systems. (Load Control, Governor, etc.)

Chapter 2.3 Maintenance, operation and information about boiler systems.

- 2.3.1 Give information about boilers.
- 2.3.2 Describe maintenance, repair and routine operations of boilers, give information about removal tools and measuring equipment.
- 2.3.3 Describe operations of boiler control systems.

Chapter 2.4 Maintenance, operation and information about ship auxiliary machinery (Fuel and Lube Oil Separator, Oily Water Separator, Air Compressor, Refrigeration and HVAC, Fresh Water Generating Systems, Sewage Treatment Unit, Incinerator).

- 2.4.1 Give general information about ship auxiliary machinery and operations, describe maintenance and repair requirements of auxiliary machinery and give information about removal tools and measuring equipment.
- 2.4.2 Describe auxiliary machinery control systems.
- 2.4.3 Pump list including type, flow, pressure or head

Chapter 2.5 Maintenance, operation and information about deck machinery (Steering Gears, Cranes, Windlasses, Hatch Cover Hydraulic Systems, Ro-Ro Hydraulic Systems, Cargo Pumps etc.).



- 2.5.1 Give general information, describe maintenance, repair and routine operations of deck machinery, and give information about removal tools and measuring equipment.
- 2.5.2 Describe deck machinery control systems operations.

Chapter 2.6 Maintenance, operation and information about ship electrical, electronic and automation systems and equipment.

- 2.6.1 Give general information about operations of ship electrical, electronic and automation systems.
- 2.6.2 Describe routine, maintenance and repair operations of ship electrical, electronic and automation systems including measuring and test equipment's.

Chapter 2.7 Maintenance, operation and information about hydraulic and pneumatic systems.

- 2.7.1 General information about hydraulic equipment, valves and systems.
- 2.7.2 General information about pneumatic equipment, valves and systems.
- 2.7.3 Describe routine, maintenance and repair operations of hydraulic and pneumatic systems.

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Chapter 2.8 Explanation of facilities about prevention, control and firefighting onboard operations.

2.8.1 Information about portable firefighting systems.

2.8.2 Information about fixed firefighting systems.

2.8.3 Information about detectors and alarms onboard.

Chapter 2.9 Description of operation of life-saving appliances.

Chapter 2.10 Description of medical first aid procedures onboard.

Chapter 2.11 Drills.



2.11.1 Give information about firefighting drills and your duty at firefighting drills.

2.11.2 Give information about abandon ship drills and your duty at abandon ship drills.

2.11.3 Give information about man over board drills and your duty at man over board drills.

2.11.4 Give information about piracy attack drills and your duty at piracy attack drills.



2.11.5 Give information about other drills.

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.1 Maintenance, operation and information about main engine (Diesel, Steam Turbine or Gas Turbine).	
Sub Chapter No. & Title	2.1.1 Give information about main engine.
First Assistant Engineer Initials:	

Note: When it is required additional empty copies of this page must be used and numbered.



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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.1 Maintenance, operation and information about main engine (Diesel, Steam Turbine or Gas Turbine).	
Sub Chapter No. & Title	2.1.2 Describe maintenance, repair and routine operations of main engine, give information about removal tools and measuring equipment.
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.1 Maintenance, operation and information about main engine (Diesel, Steam Turbine or Gas Turbine).	
Sub Chapter No. & Title	2.1.3 Describe routine operations of main engine control systems (Maneuvering System, Governor, Oil Mist Detector, Speed, Pressure and Temperature Limits etc.).
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.2 Maintenance, operation and information about generator (Diesel, Steam Turbine, Shaft Generator).	
Sub Chapter No. & Title	2.2.1 Give information about generators.
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.2 Maintenance, operation and information about generator (Diesel, Steam Turbine, Shaft Generator).	
Sub Chapter No. & Title	2.2.2 Describe maintenance, repair and routine operations of generator, give information about removal tools and measuring equipment.
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.2 Maintenance, operation and information about generator (Diesel, Steam Turbine, Shaft Generator).	
Sub Chapter No. & Title	2.2.3 Describe routine operations of generator control systems (Load Control, Governor, etc.).
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD

Date of commenced:

Date of completed:

Chapter 2.3 Maintenance, operation and information about boiler systems.



Sub Chapter No. & Title

2.3.1 Give information about boilers.

First Assistant Engineer Initials:

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.3 Maintenance, operation and information about boiler systems.	
Sub Chapter No. & Title	2.3.2 Describe maintenance, repair and routine operations of boilers, give information about removal tools and measuring equipment.
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.3 Maintenance, operation and information about boiler systems.	
Sub Chapter No. & Title	2.3.3 Describe operations of boiler control systems.
First Assistant Engineer Initials:	

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	Revision No:	03	Revision Date:	28.10.2015	

CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.4 Maintenance, operation and information about ship auxiliary machinery (Fuel and Lube Oil Separator, Oily Water Separator, Air Compressor, Refrigeration and HVAC, Fresh Water Generating Systems, Sewage Treatment Unit, Incinerator).	
Sub Chapter No. & Title	2.4.1 Give general information about ship auxiliary machinery and operations, describe maintenance and repair requirements of auxiliary machinery and give information about removal tools and measuring equipment.
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
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Chapter 2.4 Maintenance, operation and information about ship auxiliary machinery (Fuel and Lube Oil Separator, Oily Water Separator, Air Compressor, Refrigeration and HVAC, Fresh Water Generating Systems, Sewage Treatment Unit, Incinerator).	
Sub Chapter No. & Title	2.4.2 Describe auxiliary machinery control systems.
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.4 Maintenance, operation and information about ship auxiliary machinery (Fuel and Lube Oil Separator, Oily Water Separator, Air Compressor, Refrigeration and HVAC, Fresh Water Generating Systems, Sewage Treatment Unit, Incinerator).	
Sub Chapter No. & Title	2.4.3 Pump list including type, flow, pressure or head.
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.5 Maintenance, operation and information about deck machinery (Steering Gears, Cranes, Windlasses, Hatch Cover Hydraulic Systems, Ro-Ro Hydraulic Systems, Cargo Pumps etc.).	
Sub Chapter No. & Title	2.5.1 Give general information, describe maintenance, repair and routine operations of deck machinery, and give information about removal tools and measuring equipment.
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.5 Maintenance, operation and information about deck machinery (Steering Gears, Cranes, Windlasses, Hatch Cover Hydraulic Systems, Ro-Ro Hydraulic Systems, Cargo Pumps etc.).	
Sub Chapter No. & Title	2.5.2 Describe deck machinery control systems operations.
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.6 Maintenance, operation and information about ship electrical, electronic and automation systems and equipment.	
Sub Chapter No. & Title	2.6.1 Give general information about operations of ship electrical, electronic and automation systems.
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.6 Maintenance, operation and information about ship electrical, electronic and automation systems and equipment.	
Sub Chapter No. & Title	2.6.2 Describe routine, maintenance and repair operations of ship electrical, electronic and automation systems including measuring and test equipment.
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.7 Maintenance, operation and information about hydraulic and pneumatic systems.	
Sub Chapter No. & Title	2.7.1 General information about hydraulic equipment, valves and systems.
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.7 Maintenance, operation and information about hydraulic and pneumatic systems.	
Sub Chapter No. & Title	2.7.2 General information about pneumatic equipment, valves and systems.
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.7 Maintenance, operation and information about hydraulic and pneumatic systems.	
Sub Chapter No. & Title	2.7.3 Describe routine, maintenance and repair operations of hydraulic and pneumatic systems.
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.8 Explanation of facilities about prevention, control and firefighting onboard operations.	
Sub Chapter No. & Title	2.8.2 Information about fixed firefighting systems.
First Assistant Engineer Initials:	

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Date of commenced:	Date of completed:
Chapter 2.8 Explanation of facilities about prevention, control and firefighting onboard operations.	
Sub Chapter No. & Title	2.8.3 Information about detectors and alarms onboard.
First Assistant Engineer Initials:	

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Date of commenced:



Date of completed:

Chapter 2.9 Description of operation of life-saving appliances.

First Assistant Engineer Initials:

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Date of commenced:	Date of completed:
Chapter 2.10 Description of medical first aid procedures onboard.	
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.11 Drills	
Sub Chapter No. & Title	2.11.1 Give information about firefighting drills and your duty at firefighting drills.
First Assistant Engineer Initials:	

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Date of commenced:

Date of completed:

Chapter 2.11Drills



Sub Chapter No. & Title

2.11.2 Give information about abandon ship drills and your duty at abandon ship drills.

First Assistant Engineer Initials:

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.11 Drills	
Sub Chapter No. & Title	2.11.3 Give information about man over board drills and your duty at man over board drills.
First Assistant Engineer Initials:	

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CADET'S OBSERVATIONS AND LEARNING PRACTICAL EXPERIENCE RECORD	
Date of commenced:	Date of completed:
Chapter 2.11 Drills	
Sub Chapter No. & Title	2.11.4 Give information about piracy attack drills and your duty at piracy attack drills.
First Assistant Engineer Initials:	

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Date of commenced:

Date of completed:

Chapter 2.11Drills



Sub Chapter No. & Title

2.11.5 Give information about other drills.

First Assistant Engineer Initials:

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SECTION 8. SEA PROJECT WORK

8.1 Purpose

The purpose in carrying out sea project works during sea service that you gain progressively a knowledge of the ships in which you serve and the equipment carried onboard.

8.2 Scope

To achieve the purpose successfully will require intelligent observation, initiative and reference, where appropriate, to ships' plans and other data, besides manufacturer's instructions and operation manuals. It will moreover be essential in a number of cases to seek the help and guidance of your officers in order to obtain the information required.

8.3 Field of Application

The majority of the projects deal with obtaining factual details which concern such matters as the ship's structural features and equipment including various supply systems – bunker fuel, lubrication oil, fresh water etc.

8.4 Assessment of Accuracy

The technical accuracy of each project will be checked by the Chief Engineer and will be evaluated by ITUMF. 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 presentations of facts
- c-) Neatness of writing, diagrams/ labels
- d-) Spelling and grammar.

8.5 Instructions

1. Before commencing each project determine the type of information required, i.e. Written with illustration or an illustration.
2. Use PEN or PENCIL, which are to be drawn to roughly. Colors should be used whenever possible.
3. Your project works should be handed to Chief Engineer for inspection at the same times as you present this Training Record Book. Chief Engineer shall investigate and assess the compliance of carried out works are in accordance with the shipboard service procedures and his professional experience. Completed project works should be inserted into Sea Project Records Section of the Cadet Sea Training File as described in detail 1.11.2 of Section 1 of this record book.

This file is going to be separated and indexed for each project and assignment.

“Sea Project Records Section” shall also be separated into four subsections with the following labels:

Project 1. System Configuration Diagrams

Project 2. Main Engine



Project 3. Bunkering and bilge operations

Project 4. Engine Watchkeeping Information

8.6 Projects

Project 1. System Configuration Diagrams

Search out and draw line diagrams of the following systems and describe the functions of each element of diagrams. Use the correct symbols to show on the appropriate diagrams: valves, remote or emergency controls and other arrangements. Identify pressure relief valves, bursting discs, drains, air cocks, filter units, sounding arrangements and vent pipes.

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Assignment 1.1 Sea water system

Assignment 1.2 Cooling water system

Assignment 1.3 Fuel transfer system

Assignment 1.4 Lube oil system

Assignment 1.5 Compressed air and starting air system

Assignment 1.6 Steam system

Assignment 1.7 Bilge and ballast systems

Assignment 1.8 Stern tube and propeller

Project 2. Main Engine

Assignment 2.1 Fuel injection and combustion.

Assignment 2.2 Scavenging air and exhaust system.

Assignment 2.3 Distribution of lube oil to all moving parts within the engine. The average lube oil consumption for cylinder oil and main lubrication oil. Reasons of loss of lube oil.

Assignment 2.4 Take indicator diagram from main engine, and make comments about the diagram.

Assignment 2.5 Take deflection report and make comments about the report.

Assignment 2.6 Piston, piston rings, liners and crankshaft measurements.

Project 3. Bunkering and Bilge Operations

Assignment 3.1 Describe the procedures adopted in taking bunkers in which you were involved. State clearly the sequence of events and the precautions taken. Present the results of any tests taken at the time or from analysis made by a laboratory ashore.

Assignment 3.2 Describe bilge operations with the functions of elements used for bilge operations and keeping records in oil record book with an example of oil record book page.

Assignment 3.3 Describe sounding operations and calculation of volume of liquid in a tank.

Project 4. Watchkeeping and Maneuvering Information

Assignment 4.1 Describe watchkeeping procedures

Assignment 4.2 Describe how orders are given, confirmed and executed and the interactions with bridge and other areas of the vessel.

Assignment 4.3 Describe maneuvering procedures.



Assignment 4.4 Fill the attached empty log book pages of main engine and generators for once.

Project 5. Seaworthiness of The Ship

Assignment 5.1 Describe working principles of the elements of watertight integrity.

The Cadet should use "**Sea Project Record**" sheet which is illustrated in following pages for each project and assignment.

The assignments on this record shall constitute the critical steps, sequence of actions and his/her understandings from each project and assignment that is indicated in "Section 3".

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SEA PROJECT RECORD	
Date of commenced:	Date of completed:
Project 1. System configuration diagrams	
Assignment No. & Title	Assignment 1.1 Sea water system
First Assistant Engineer Initials:	

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Date of commenced:

Date of completed:

Project 1. System configuration diagrams



Assignment No. & Title

Assignment 1.2 Cooling water system

First Assistant Engineer Initials:

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SEA PROJECT RECORD	
Date of commenced:	Date of completed:
Project 1. System configuration diagrams	
Assignment No. & Title	Assignment 1.3 Fuel transfer system
First Assistant Engineer Initials:	

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SEA PROJECT RECORD	
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Project 1. System configuration diagrams	
Assignment No. & Title	Assignment 1.4 Lube oil system
First Assistant Engineer Initials:	

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SEA PROJECT RECORD	
Date of commenced:	Date of completed:
Project 1. System configuration diagrams	
Assignment No. & Title	Assignment 1.5 Compressed air and starting air system
First Assistant Engineer Initials:	

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SEA PROJECT RECORD	
Date of commenced:	Date of completed:
Project 1. System configuration diagrams	
Assignment No. & Title	Assignment 1.6 Steam system
First Assistant Engineer Initials:	

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Date of commenced:

Date of completed:

Project 1. System configuration diagrams



Assignment No. & Title

Assignment 1.7 Bilge and ballast systems

First Assistant Engineer Initials:

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SEA PROJECT RECORD	
Date of commenced:	Date of completed:
Project 1. System configuration diagrams	
Assignment No. & Title	Assignment 1.8 Stern tube and propeller
First Assistant Engineer Initials:	



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SEA PROJECT RECORD	
Date of commenced:	Date of completed:
Project 2. Main Engine	
Assignment No. & Title	Assignment 2.2 Scavenging air and exhaust system
First Assistant Engineer Initials:	

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Date of commenced:	Date of completed:
Project 2. Main Engine	
Assignment No. & Title	Assignment 2.3 Distribution of lube oil to all moving parts within the engine. The average lube oil consumption for cylinder oil and main lubrication oil. Reasons of loss of lube oil.
First Assistant Engineer Initials:	

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SEA PROJECT RECORD	
Date of commenced:	Date of completed:
Project 2. Main Engine	
Assignment No. & Title	Assignment 2.4 Take indicator diagram from main engine, and make comments about the diagram.
First Assistant Engineer Initials:	

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Date of commenced:	Date of completed:
Project 2. Main Engine	
Assignment No. & Title	Assignment 2.5 Take deflection report and make comments about the report.
First Assistant Engineer Initials:	

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Date of commenced:	Date of completed:
Project 2. Main Engine	
Assignment No. & Title	Assignment 2.6 Piston, piston rings, liners and crankshaft measurements.
First Assistant Engineer Initials:	

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SEA PROJECT RECORD	
Date of commenced:	Date of completed:
Project 3. Bunkering and bilge operations	
Assignment No. & Title	Assignment 3.1 Describe the procedures adopted in taking bunkers in which you were involved. State clearly the sequence of events and the precautions taken. Present the results of any tests taken at the time or from analysis made by a laboratory ashore.
First Assistant Engineer Initials:	

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SEA PROJECT RECORD	
Date of commenced:	Date of completed:
Project 3. Bunkering and bilge operations	
Assignment No. & Title	Assignment 3.2 Describe bilge operations with the functions of elements used for bilge operations and keeping records in oil record book with an example of oil record book page.
First Assistant Engineer Initials:	

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SEA PROJECT RECORD	
Date of commenced:	Date of completed:
Project 3. Bunkering and bilge operations	
Assignment No. & Title	Assignment 3.3 Describe sounding operations and calculation of volume of liquid in a tank.
First Assistant Engineer Initials:	

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Date of commenced:	Date of completed:
Project 4. Watchkeeping and maneuvering information	
Assignment No. & Title	Assignment 4.1 Describe watchkeeping procedures
First Assistant Engineer Initials:	

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Date of completed:

Project 4. Watchkeeping and maneuvering information



Assignment No. & Title

Assignment 4.2 Describe how orders are given, confirmed and executed and the interactions with bridge and other areas of the vessel.

First Assistant Engineer Initials:

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SEA PROJECT RECORD	
Date of commenced:	Date of completed:
Project 4. Watchkeeping and maneuvering information	
Assignment No. & Title	Assignment 4.3 Describe maneuvering procedures.
First Assistant Engineer Initials:	



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SEA PROJECT RECORD	
Date of commenced:	Date of completed:
Project 5. Seaworthiness of the ship	
Assignment No. & Title	Assignment 5.1 Describe working principles of the elements of watertight integrity.
First Assistant Engineer Initials:	

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