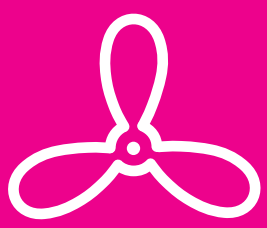
MINISTRY OF MARITIME AFFAIRS
AND INSULAR POLICY
SEAFARERS TRAINING DIRECTORATE

ON BOARD TRAINING RECORD BOOK FOR ENGINEER CADETS

(FIRST SEAGOING TRAINING PERIOD)

O.T.R.B. 1

ENGINE DEPARTMENT



PIRAEUS 2021

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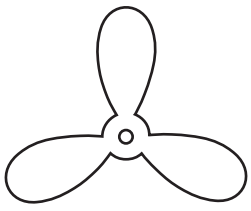

PIRAEUS 2021

INSTRUCTIONS
FOR THE ENGINEER OFFICER IN CHARGE OF TRAINING

The present book contains the English translation of all the texts and tasks contained in the Greek on board training record book for deck/engineer cadets of the first seagoing training period and its purpose is to inform the deck or engineer officer in charge of training on board the vessel of the duties and tasks that the trainee has to carry out during his/her first mandatory seagoing service. The content of the book is laid out per page and task, just like it is presented in the corresponding Greek training record book. Any tasks in the Greek training record book contain terms or information already written in English, have not been included in this book. Instead of them, a note has been written that refers to the information already written in the Greek training record book.

ΙΔΡΥΜΑ ΕΥΓΕΝΙΔΟΥ
1954

Pages 9-10

TRAINING REGULATION OF THE MERCHANT MARINE ACADEMIES (M.M.A.) FOR DECK AND ENGINE OFFICERS

ARTICLE 22

ON BOARD TRAINING SEAGOING SERVICE

1. (a) During the first seagoing training period the student is obliged to perform a seagoing service of 5-6 months and during the second seagoing training period a seagoing service of 6-7 months, provided that the overall length of both seagoing periods is not less than twelve (12) months.

(b) A student who, for whatever reason, has not completed the aforementioned designated seagoing service during the first or the second seagoing training period, may register for the 2nd or the 4th semester respectively, as long as the seagoing service s/he has completed is short of the minimum allowed limit of the first seagoing training period or the total of the minimum limits of both the first and the second seagoing training periods respectively, proportionate to the percentage (15%) of the absences mentioned in paragraph 1 of article 21 of the current Regulation (s/he should have completed a minimum seagoing service of at least four (4) months and seven (7) days and nine (9) months and ten (10) days respectively), provided that before graduating from the Academy and within the time limits determined in paragraph 9 of article 19 of the current Regulation, s/he shall have completed the mandatory overall twelve-month seagoing service.

(c) If the first and the overall (first + second) seagoing services have a shorter length than the limits mentioned in the previous case (b), it is possible for the student to exceptionally register for the 2nd or the 4th semester respectively, via a ministerial decision and under the following conditions:

1. The first seagoing service must have a minimum length of three (3) months or the first and the second seagoing services must have an overall minimum length of eight (8) months and have been assessed as successful by the bilateral assessment committee.

2. There is enough evidence for an Act of God or other reasons that justify the exceptional registration of the student.

3. The view of the Merchant Marine Academy Council is positive and

4. Before graduating from the Academy and within the time limits determined in paragraph 9 of article 19 of the current Regulation, the student shall complete the mandatory overall twelve-month seagoing service.

2. During each seagoing service the student has to complete:

(a) An on board training record book and

(b) A personal work logbook.

3. The ship's navigational or engineer officer in charge of training writes down an appropriate account regarding the trainee's general progress, which shall then be signed by the master and handed inside a sealed envelope to the trainee who has to deliver it to the Academy.

4. The student who has completed the first or the second seagoing service submits an application for his/her registration for the 2nd or the 4th semester respectively, attaching to it the on board training record book fully completed, the personal work logbook and the training officer's account enclosed in the sealed envelope. Then, s/he verbally supports the practical training s/he has had on board in the form of an interview, before a committee that consists of two instructors of maritime subjects of his/her specialty.

In the condition that an adequate number of instructors of maritime subjects of the student's specialty are not permanently employed in the Academy, casual associate instructors of maritime subjects may be members of the assessment committee.

5. After the student's interview has been completed and after taking into consideration the navigational or engineer training officer's account, the above-mentioned committee decides whether the student's seagoing service was successful or not by writing a relevant report.

6. The committee's meetings, as well as the relevant reports, must be completed, in any case, before the beginning of the corresponding semester. In the case of a student's exceptional late registration as per article 3 of the current Regulation, the committee holds a meeting whenever it is required, after the beginning of the 2nd or the 4th semester until the date that the student is to be rejected due to absences.

7. If the seagoing service is ruled as unsuccessful, the student is obliged to perform it again and is excluded from attending the next semester at the Academy. The seagoing service is to be performed within the time limits determined in paragraph 5 of article 2 of the current Regulation.

8. The student who does not successfully complete the seagoing service for the second time until the beginning of the next semester, is permanently rejected from the Academy.

The student is also permanently rejected from the Academy when, although s/he had the right to perform the first or the second mandatory seagoing service:

(a) s/he does not show up at his/her Academy to register for the 2nd or the 4th semester respectively, within the limits determined in paragraphs 1 and 3 of article 3 of the current Regulation, during the current as well as the next academic year, or

(b) s/he does not show up at his/her Academy to register for the 2nd or the 4th semester respectively, within the limits determined in paragraphs 1 and 3 of article 3 of the current Regulation, during the current as well as the next academic year and if during the next academic year the seagoing service s/he has completed is ruled as unsuccessful, or

(c) if during the current academic year the seagoing service s/he has completed is ruled as unsuccessful and during the next academic year s/he does not show up at his/her Academy to register for the 2nd or the 4th semester respectively, within the limits determined in paragraphs 1 and 3 of article 3 of the current Regulation.

9. After the assessment of each mandatory seagoing service, the students' on board training record books (O.T.R.B) and personal work logbooks are kept in the Academy's secretariat for six (6) months and afterwards they are destroyed.

Page 11

STUDENT'S PERSONAL DETAILS

FULL NAME:……..... FATHER'S NAME:……
SEAMAN'S BOOK No.:…… DATE OF REGISTRATION:…… REGISTRATION No.:…….
STUDENT'S ORIGIN (1):…..……..
……

VESSEL'S DETAILS

Vessel's s/n	Name and type of vessel (2)	Ship's register	Date	
			Sign on	Sign off

(1) Specify the name of the student's Academy.
(2) M/V = Cargo vessel, M/T = Tanker, P/S = Passenger vessel, F/B = Ferry Boat, LNG or LPG = Gas Carrier, Ro/Ro = Roll on/Roll off, OBO = Oil Bulk Ore Carrier, etc.

SPECIMEN

SPECIAL ACCOUNT

For the student ……... (1)
The undersigned …… (2)
…….. (3) of the M/V ……. (4) flying the …… flag, registered in ……., GRT ……
with …….. main engines, horsepower ……,
hereby report the following:

1. The student of the Merchant Marine Academy of …….. (5) …… (1) father's name …… (6) Seaman's Book No. …… signed on the vessel on …../…../20….. and signed off on …../…../20….. (7).

2. During his/her seagoing service s/he was occupied under my supervision and instructions as training officer in charge of practical training according to what is determined in the on board training record book of the Merchant Marine Academies (O.T.R.B. 1).

3. Further remarks:……
……
……
……
……

Date ……

The officer in charge

…… (8)

ATTESTED
Date ……
THE MASTER
Vessel's stamp – Signature

NOTE

This account is filled in after the completion of the training seagoing service.
In case the training officer or the trainee sign off before the completion of the training seagoing service an account is written for the period of service until the day of discharge.
The new training officer writes a supplementary account.
(1) Student's full name.
(2) Training officer's full name.
(3) Master or Engineer.
(4) Vessel's name.
(5) Student's Academy.
(6) Father's name.
(7) The dates should be written in two digits (e.g. 07/02/2000).
(8) A signature and the ship's stamp are printed. If the training officer is not the Master, the Special Account is attested by the Master with his signature and the vessel's stamp.

Page 13

TASKS PROGRESS GUIDE

You may follow the progress of your tasks by crossing out the numbers of the tasks you have undertaken in the following table.

	"PARTICULARS OF THE VESSEL" completed	"FAMILIARISATION WITH THE VESSEL" carried out
First vessel		
Second vessel		
Third vessel		

NUMBERS OF TASKS (N/T)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

…….. The table goes up to number 157.

Pages 14-18

WEEK	NUMBER OF TASKS (N/T) UNDERTAKEN EVERY WEEK (1)					TOTAL OF TASKS	TRAINING OFFICER'S CERTIFICATION (2)
1st FROM:…… TO:……						(in full)	……. (place) ……. (date) ……. (signature) (stamp)

In the rest of the table, up to page 18, only the serial number that refers to the weeks on board is changing (2nd to 30th week).

At the bottom of each page the following notes are included:

(1) Only one N/T is filled in each square. The blanks are crossed out with two diagonal lines.
(2) The training officer certifies that the tasks mentioned have been undertaken on board during the corresponding week.

UNIT CONVERSION TABLE

METRIC m, cm, kg, M.T.		→ IMPERIAL ft, inch, LT, Pounds	ENGLISH ft, inch, LT, Pounds		→ IMPERIAL m, cm, kg, M.T.
millimetres	x 0,03937	→ inches	inches	x 25,4	→ millimetres
centimetres	x 0,3937	→ inches	inches	x 2,54	→ centimetres
metres	x 3,2808	→ feet	feet	x 0,3048	→ metres
square metres	x 10,764	→ square feet	square feet	x 0,0929	→ square metres
cubic metres	x 35,316	→ cubic feet	cubic feet	x 0,0283	→ cubic metres
kilograms	x 2,2046	→ libres [1]	libres	x 0,45359	→ kilograms
kilograms	x 0,0009842	→ long ton [2]	long ton	x 1016,047	→ kilograms
metric tons [3]	x 0,9842	→ long ton	long ton	x 1,016	→ metric tons
TPC [4]	x 2,4998	→ TP1" [5]	TP1"	x 0,4	→ TPC
MTC [6]	x 8,2014	→ MT1" [7]	MT1"	x 0,122	→ MTC
m.rad	x 187,9767	→ ft x deg	ft x deg	x 0,0053	→ m.rad
specific gravity (MT/m^3)	x 0,0279	→ sp.grav (LT/f^3)	specific gravity (LT/f^3)	x 35,88	→ sp.grav (MT/m^3)
stowage factor (m^3/MT)	x 35,88	→ st.fac. (f^3/LT)	stowage factor (f^3/LT)	x 0,0279	→ st.fac. (m^3/MT)
metric tons [8]	x 3,229	→ long tons [9]	long tons	x 0,3097	→ metric tons

RELATION BETWEEN VOLUME AND WEIGHT OF WATER

1 cubic metre of fresh water (sp. grav. = 1) = 1 metric ton (1000 kg)
1 cubic metre of seawater (sp. grav. = 1,025) = 1,025 metric ton (1025 kg)
1 cubic metre of seawater = 0,975 cubic metres

[1] Pounds or libres
[2] 1 Long ton = 2240 LBS
[3] 1 Metric ton = 1000 kg = 1 tonne
[4] Metric tons per cm
[5] Long tons per inch
[6] Metric tons per cm
[7] Long tons per inch
[8] Metric tons
[9] Long tons

TRAINEE'S TASKS

Page 21

PARTICULARS OF THE VESSEL

Full knowledge of the vessel is a basic characteristic of a good officer. The completion of the table below will help you systematise and supplement your knowledge on this matter.
Instructions: It is essential that you complete both columns, SI (Metric system) and Imperial (English system). If the particulars of the vessel are provided in one unit system only, use the table on page 19 for the conversion. In the last column write the Greek translation of the terms mentioned in the first column.

FIRST VESSEL

VESSEL'S NAME			Call Sign
	S.I.	IMPERIAL	GREEK TRANSLATION OF THE FIRST COLUMN

Page 23

SECOND VESSEL

VESSEL'S NAME			Call Sign
	S.I.	IMPERIAL	GREEK TRANSLATION OF THE FIRST COLUMN

Page 25

THIRD VESSEL

VESSEL'S NAME			Call Sign
	S.I.	IMPERIAL	GREEK TRANSLATION OF THE FIRST COLUMN

Page 27

FAMILIARISATION WITH THE VESSEL

FIRST VESSEL: .....

Complete the following items:

WHAT IS THE DISTRESS SIGNAL	
WHAT IS THE ABANDON SHIP ALARM SIGNAL	
WHAT IS THE FIRE ALARM SIGNAL	
WHAT IS THE FLOODING ALARM SIGNAL	
WHAT IS YOUR STATION WHEN ABANDONING THE VESSEL	
WHAT ARE YOUR DUTIES IN CASE OF FIRE	
WHAT ARE YOUR DUTIES IN CASE OF FLOODING	

TASKS OF FIRST PRIORITY	Training Officer's signature	Date
Bridge layout and equipment understood (instruments, equipment, switches, fuses etc.).		
First aid equipment and its keys located on board vessel.		
Fire fighting equipment (alarm activating points, alarm bells, extinguishers, hydrants, fire axes and hoses) located on vessel.		
Line throwing apparatus located on vessel.		
Distress rockets, flares and other pyrotechnics, breathing apparatus, fire-fighter's outfit and equipment located on vessel.		
Emergency stops for main engine located on deck and safety valves located on vessel.		
Watertight doors located on vessel and their operation comprehended (mechanic and manual).		
CO_2 bottle room located on vessel and system operation comprehended.		
Valves of smothering apparatus located in pump room, cargo tanks and cargo holds.		
Emergency fire pump located.		
Change of rudder from automatic to manual comprehended.		
Load lines (for a tanker) or cargo space layout (for a cargo vessel) comprehended.		

Page 28

FAMILIARISATION WITH THE VESSEL

SECOND VESSEL: ……

Complete the following items:

The table is similar to that of page 27.

Page 29

FAMILIARISATION WITH THE VESSEL

THIRD VESSEL: ……

Complete the following items:
The table is similar to that of page 27.

Page 30

LIFESAVING APPLIANCES

Check the equipment and supplies of a lifeboat on your vessel and complete the following table.
LIFEBOAT No……. (……).

N/T **1**

EQUIPMENT & SUPPLIES	GREEK TRANSLATION OF THE PREVIOUS COLUMN	Existing quantity inside the lifeboat	Quantity to be available as per SOLAS '74

Page 32

What measures are taken for the maintenance of the lifeboat equipment? What is the main reason for its damage?

Page 33

N/T	TASK
2	What are the minimum food rations and drinking water quantities according to the regulations for a lifeboat? Under which condition is it permitted to reduce the quantity of drinking water? …… …… ……
3	Complete the following information about the lifeboat in N/T 1. a) Lifeboat No. …… b) Construction material …… c) Length …… d) Breadth …… e) Lateral height …… f) Capacity in cubic metres …… g) Number of persons …… h) Floatation tanks: Material ……..... Volume …… Which of the above-mentioned items must be marked on the lifeboat and where? What other items should be marked on the lifeboat and where? …… …… ……

Page 34

N/T	TASK
4	Complete the following table about the lifeboat in N/T 1. (Write the Greek translation in the brackets provided). ***The table included in the task is already written in English.*** If the expiry date is not marked, how can it be calculated? What are the manufacturer's instructions regarding the use of the above-mentioned emergency pyrotechnics? (If written in foreign language, copy them in that language and provide a Greek translation next to them). …… ……

Page 35

N/T	TASK
5	What measures should be taken so that: a) The lifeboat can be kept next to the embarkation deck. b) After embarkation, the lifeboat can be moved away smoothly (without any resistance) from the deck in order to be launched. …… …… ……
6	Describe the system through which the tackles of the lifeboat are freed. Also describe the relevant instructions and the conditions for its proper operation. What kind of hazards may arise due to bad operation or wrong handling? …… ……

Page 36

N/T	Complete the following information regarding the propulsion engine of a lifeboat on your vessel.
7	Manufacturer: …… Type: …… Serial No.: …… Horsepower: …… Number of cylinders: …… Fuel: …… Fuel tank capacity: …… How many hours can the engine operate with the fuel available in its tank? …… How many hours should the fuel be adequate as per SOLAS 1974? …… What is the number of the SOLAS regulation and paragraph that provide the above-mentioned details? …….. What is the cooling system of the engine? …….. …… What kind of maintenance is required for the engine? …… …… …… …… I hereby certify that the trainee has learnt how to operate the engine of the lifeboat mentioned above. …… (Training Officer's signature) …… (Date)

Page 37

N/T	TASK
8	What is the best way to embark a lifeboat? a. From the vessel …… …… b. From the water …… ……
9	How can you bring a liferaft that was inflated upside down back to normal position? …… ……
10	Write down how the liferafts should be launched according to the manufacturer's instructions and underline the most significant action. …… ……

Page 38

N/T	TASK
11	How many liferafts are there on board your vessel? What is their capacity? Which regulation states their number and capacity, and what exactly is required for your vessel? Where is each liferaft located? …… ……
12	Choose one of the vessel's liferafts and complete its particulars in the following table. Manufacturer:…… Type:…… Construction material:…… Serial number:…… Last test date:…… Next test date:…… Number of persons:…… What do the regulations require in case a vessel sinks without the liferaft having been launched to the water and how is this ensured on your vessel? …… ……

Page 39

N/T	TASK
13	Find out when the lifeboat launching system is tested and maintained. Describe in detail the maintenance work done and the safety measures taken to avoid any accidents for the crew. …… ……

Page 40

It is certified that the trainee has participated in the following abandon ship drills, during which the lifeboats were launched and the crew practised them.

Date	Signature	Port	Number of lifeboat	Type of practice (rowing, etc.)
…… …… ……	…… …… ……	…… …… ……	…… …… ……	…… …… ……

N/T	TASK
14	Answer the following questions regarding lifebuoys. Write down what can be found on your vessel in the first column and what is required by SOLAS regulation no. (……)* in the second column.

Lifebuoys	1	2
Total number		
Construction material		
" "		
Colour		
Number of lifebuoys equipped with: a) Line …… b) Automatic light …… c) Length of line …… d) Construction material of line …… e) Smoke signal ……	…… …… …… …… ……	…… …… …… …… ……

How can the good condition of lifebuoys be checked and what kind of maintenance is required?

……

……

Note:
* To be completed by the trainee.

Page 41

N/T	TASK
15	Answer the following questions regarding the automatic lights of lifebuoys on board your vessel: Manufacturer: …… Type: …… How they are activated: …… …… …… How should they be attached to ensure their proper operation? …… …… What kind of maintenance is required? …… ……
16	Answer the following questions regarding lifejackets: Total number: …… Construction material: ……... Way to ensure their buoyancy: …… …… Colour: …… Distinctive marking: …… …… How is their good condition checked and how often is that done? …… …… ……

Page 42

N/T	TASK
17	Complete the missing information regarding the line throwing apparatus on your vessel: Manufacturer and type: …… Number of rockets …… Number of lines ……... Rocket construction date: …… Date of expiry ……... What are the manufacturer's instructions regarding the operation of the apparatus? (If written in foreign language, copy them in that language and provide a Greek translation) …… …… What do the regulations require for this apparatus? Which regulations are these? …… ……

Page 43

FIRE SAFETY

N/T 18

Complete the table:

Type of fire	Material burnt	Appropriate fire-extinguishing means
A		
B		
C		
D		
E		

N/T 19

Translate the following terms and explain them:

English	Greek	Interpretation
Flash point		
Fire point		
Ignition temperature		
Spontaneous combustion		
Flammable mixture		

Page 44

PORTABLE FIRE EXTINGUISHERS

Complete the following table regarding the portable fire extinguishers on board your vessel.

N/T **20**

Type	Total number of each type		Content in litres or kilograms	Test date	Types of fire for which it is dangerous	Types of fire for which it is effective	Number of charges	How do you establish that the fire extinguisher needs recharging
	Engine room and pump room	Remaining areas						
1	2	3	4	5	6	7	8	9

INSTRUCTIONS: (1) CO_2, Foam, etc. (5) If the dates are not the same, write the oldest. (6) and (7) the type of fire is to be entered with one of the letters A, B, C, D, E.

Page 45

<table>
<tr><th>N/T</th><th>TASK</th></tr>
<tr><td>21</td><td>Which are the dangers connected with the use of each type of fire extinguishers?
……
……</td></tr>
<tr><td>22</td><td>Which types of fire extinguishers can be recharged on board the vessel? What does a re-charge consist of for each type? How is recharging carried out?
……
……</td></tr>
<tr><td>23</td><td>How are the following checked and maintained: a) the fire hoses, b) the nozzles, c) the fire hydrants?
……
……</td></tr>
<tr><td>24</td><td>Complete the following table regarding the fire pumps on your vessel.
<table>
<tr><th>Fire pump
( )
(1)</th><th>No.
(2)</th><th>Where placed
( )
(3)</th><th>Pump type
( )
(4)</th><th>Capacity
( )
(5)</th><th>Driven by:
( )
(6)</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
Instructions: a) Fill in the Greek translation in the brackets provided.
b) Column (1) e.g. Sanitary, General service, butterworth etc.</td></tr>
</table>

Page 46

<table>
<tr><th>N/T</th><th>TASK</th></tr>
<tr><td>25</td><td>It is certified that the trainee has learnt how to operate the emergency fire pump and the emergency diesel generator.
……
(Training Officer’s signature)
……
(Date)</td></tr>
<tr><td>26</td><td>Complete the table below regarding your vessel.

The table included in the task is already written in English.

*Note: Fill in the Greek translation in the brackets provided.</td></tr>
</table>

27	What is the International Shore Connection? What is it used for? Where is it located on board your vessel? How many pieces does it consist of? Which pieces are they? …… ……
28	Complete the table below regarding your vessel. ***The table included in the task is already written in English.*** *Instructions: a) Fill in the Greek translation in the brackets provided.* *b) Column (1) in mm or inches.* *c) Column (2) in metres or feet.*

Page 47

N/T	TASK
29	What kind of flow is achieved in each one of the three positions of the nozzle in the sketch? 1. …… 2. …… 3. ……
30	The additional pipes in the sketch are used together with the nozzle of the previous task. What is the length of each one of them? What are they used for? What must the position of the lever be when additional pipes are used? …… …… ***Sketch:*** Bending angle 60º Bending angle 90º
31	**How often and in what way is the test of readiness and good operation of the items in N/T 31 to 37 carried out?** The fire detection system. …… ……
32	The alarm activating points and alarm bells. …… ……
33	The automatic sprinkler systems. …… ……
34	The fixed foam fire extinguishing systems. …… ……

Page 48

N/T	TASK
35	The fixed gas fire extinguishing systems (e.g. carbon dioxide CO_2) …… ……
36	The fixed steam fire extinguishing systems. …… ……
37	Other fire extinguishing systems available on your vessel. …… ……
38	Describe which fixed fire extinguishing systems are available on your vessel and which areas they are used for. …… ……
39	How many firefighter's outfits are there available on your vessel? What parts do they consist of? Which regulation describes them? …… ……

Page 49

N/T	TASK
40	Complete the table for each breathing apparatus on your vessel: Type …… Manufacturer …… Length of air hose (if available) …… Duration of operation (if self-contained) …… Length of lifeline and construction material ……
41	**How often and in what way are the readiness and good operation of the following checked?** a) The breathing apparatus with air pump. …… …… b) The self-contained breathing apparatus. …… ……
42	How does the user of a self-contained breathing apparatus make sure for how long s/he still has adequate air available? …… ……

Page 50

OCCUPATIONAL SAFETY

N/T	TASK
43	What are the measures taken for the safe work outside the engine-room workshop when cutting torches and arc welding are used? …… ……
44	What are the safety measures for avoiding accidents to persons who work on a scaffold? …… ……
45	**Mention the safety measures for avoiding occupational accidents when working:** a) With arc welding …… …… b) With oxygen …… ……

Page 51

OCCUPATIONAL SAFETY

N/T	TASK
	c) With machine tools …… …… d) In enclosed spaces …… …… e) During paint work …… ……
	HYGIENE
46	What do the regulations require for maintaining the potable water tanks? …… ……
47	What kind of coating do potable water tanks have on your vessel? What kind of maintenance is required? …… ……

Page 52

HYGIENE

N/T	TASK
48	You are going to load potable water. Describe in detail the measures you will take in order to ensure its sanitary condition. …… ……
49	Your vessel is heading to a port where there is endemic malaria. Describe in detail the pre-cautionary measures you will take in order to protect the health of your crew. …… ……
	RUDDER
50	Sketch the layout of the main parts the rudder installation is composed of inside the rudder compartment and describe briefly its operation. …… ……

Page 54

RUDDER

N/T	TASK
51	Write a short description of the auxiliary steering system of your vessel stating the following: a) The location on board where the vessel is steered from. b) The way of changing from steering on the bridge to steering with the emergency steering gear. c) How often and in what way is the maintenance of the system carried out? d) How often are a system test and a relevant drill held? …… …… …… ……

Page 55

CARGO VESSELS

N/T	TASK
52	From a safety point of view, what is the significance of the bilge sounding pipes? …… ……
53	Draw a sketch of the vessel's deck where you will indicate the position of all the sounding and ventilation pipes. Mark the ventilators with the letter V and the sounding pipes with the letter S and a number. In a separate table write what each one of them is used for, e.g. V5, double bottom N:2, S10 hold bilge N:3.

Page 56

CARGO VESSELS

N/T	TASK
54	Mention in detail the dangers a person runs into when entering a space (cargo hold, tank) which has been enclosed for a period of time. Which safety measures should be taken against these dangers? …… ……
55	What is the difference between a bilge line valve and a double bottom line valve? Why is there this difference? …… ……
56	Answer the following questions regarding your vessel. How many cargo holds are available? …… …… How many hatches are there and what kind is the opening/closing system? …… …… Are they single-deck or tween-deck? …… …… Which tanks are used for ballast? …… …… How many cranes are there on the deck? What is their lifting capacity and their operating system? …… ……

Page 57

TANKERS

N/T	TASK
57	How is the atmosphere of a tank checked for the presence of explosive gases? What instruments are used on your vessel and what exactly do their indications mean? How is the proper operation of the instruments checked? In which situations is one type of instrument used and in which situations is the other type used (only for tankers with inert gas system)? …… ……
58	Mention in detail all the safety measures taken in order for a person to enter a cargo tank. Include all preparations made for the rescue of the person in case there is an accident in spite of the measures taken. …… ……

Page 58

TANKERS

N/T	TASK
59	What is the Hydrogen Sulphide? What are the dangers from a cargo that contains Hydrogen Sulphide (H_2S) and which are the corresponding safety measures? …… ……
60	How is your vessel's pump room ventilated? …… ……
61	What safety measures must be taken before a person enters the pump room? …… ……
62	Where exactly can you stop the cargo pumps immediately in case of an emergency? …… ……
63	Mention in detail all actions that should be taken for the rescue of a person who has been affected by gases. …… ……

Page 59

TANKERS

N/T	TASK
64	What kinds of hazards are caused when there is no suction in a centrifugal pump? When do cargo pumps on your vessel automatically stop (number of revolutions)? How often is the operation of the relevant mechanism checked? …… ……
65	When and under which circumstances is it permitted to discharge dirty ballast at sea? (Acts of God are excluded) …… ……
66	Which conditions do electrical devices (e.g. flashlights, portable VHF etc.) have to fulfil so that their use can be permitted on board tankers that transfer flammable goods? How can you make sure if such a device fulfils these conditions? …… ……
67	What material are cutting and hammering tools used in the pump room and on the main deck made of? Why? …… ……

Page 60

TANKERS

N/T	TASK
68	Mention in detail your actions if, in case of an emergency, you have to stop a) loading, b) discharging. …… ……
69	What measures are being taken on your vessel for preventing pollution from the pump room in the following situations: a) after discharging ballast and before the commencement of loading, b) After discharging the cargo and before ballasting begins. N o t e: If, on your vessel, deballasting and loading or discharging and ballasting are being held at the same time, mention the corresponding measures. …… ……

Page 61

TANKERS

N/T	TASK
70	To prevent a flame or a sparkle from entering a space that contains explosive gases, wire gauze is also used. In order to change such a wire gauze, how can you make sure whether the new one complies with the regulations, assuming that you are not certain if the old one was appropriate? What does mesh 36 mean? …… ……
71	Why are centrifugal pumps used for discharging? What suction height are these pumps put at and why? …… ……

Page 62

GENERAL QUESTIONS REGARDING INSTALLATIONS INSIDE THE VESSEL

N/T	TASK
72	Sketch the general arrangement of engines, tank machinery and engine room devices per tank top (A legend in Greek and English is required). …… ……

Page 68

N/T	TASK
73	Describe all types mentioned in the legend of each sketch in N/T 72. The description must contain the purpose and the several characteristics of each type (machinery, device, etc.) …… ……

Page 71

N/T	TASK
74	Sketch the general arrangement of machinery on the main deck (A legend in Greek and English is required). …… ……

Page 73

N/T	TASK
75	Describe each piece of machinery mentioned in the legend of N/T 74. The description must contain the purpose and the characteristics of the machinery. …… ……

Page 75

N/T	TASK
76	Complete the particulars of the evaporator(s). Type and number …….. Manufacturer …….. Operating pressure …… Daily production F.W. (TONS/DAY) …… ……
77	Mention which machinery and devices are fitted with safety valves. What is their purpose and what pressure are they set to? …… ……
78	Mention which tanks are fitted with a safety arrangement and for what purpose. …… ……

Page 76

N/T	TASK
79	Complete the particulars of a diesel generator. Type and number …….. Manufacturer …….. Power in KW and voltage …… Various characteristics …….. ……
80	Mention the actions required for: a) Starting the generator ……... b) Stopping the generator …… c) The good operation of the generator …… …… ……

Page 78

N/T	TASK
81	What is the order of action to restore a blackout of the diesel generator and what measures are taken to prevent it? …… ……

Page 79

N/T	TASK
82	Mention those fuel oil tanks for the propulsion of the vessel that are located OUTSIDE the engine room. …… ……
83	Mention the fuel oil tanks which are located INSIDE the engine room. What is their capacity? …… ……
84	Mention the diesel oil tanks for the vessel's needs. What is their capacity? …… ……

Page 80

N/T	TASK
85	Measure the oil stored in one bunkering tank outside the engine room and explain the measuring method for the amount of oil in the tank by using the calibration tables. Use those units mentioned in the calibration tables. ....

Page 81

N/T	TASK
86	Which are the essential routine operations when bunkering? ....
87	What measures are taken for preventing sea pollution when bunkering? ....

Page 82

N/T	TASK
88	What types of lubricating oil are there aboard the vessel? Mention their control instruments. What is the way for testing the various types of oil? ....

Page 83

N/T	TASK
89	Learn fully the operation and maintenance work for the centrifugal purifiers and clarifiers for oil (fuel and diesel) and lubricating oil (starting, stopping, dismantling, cleaning, assembly). Learn how to operate the air compressors. Learn how to drain the bilges of the engine room as well as the measures taken for preventing sea pollution. It is certified that the trainee has learnt how to perform the above-mentioned tasks. ..... (Training Officer's signature) ..... (Date)
90	What measures are taken for preventing sea pollution when cleaning oil (fuel and diesel) and lubricating oil with the centrifugal purifiers and clarifiers? ....

Page 84

N/T	TASK
91	Sketch the general arrangement of the most important parts of the emergency fire pump and mention how and why it is kept on standby mode. …… ……

Page 85

N/T	TASK
92	Sketch the general arrangement of the most important parts of the emergency diesel generator and mention how and why it is kept on standby mode. …… ……

Page 87

N/T	TASK
93	Sketch the tailshaft together with the bearings, the stern tube and the watertight seal system. (A legend in Greek and English is required). …… ……

Page 88

N/T	TASK
94	Sketch the arrangement of the most important parts of the refrigerating system installation. …… ……

Page 89

GENERAL INFORMATION ON BOILERS

N/T	TASK
95	Complete the details of a main boiler or the auxiliary boiler. Type and number …….. Manufacturer …….. Operating pressure …… Steam temperature …… Number of burners …… Steam production KGR/HR …….. Boiler usage …… Consumption ……..
96	Mention the gauges for monitoring the operation of the main boiler or the auxiliary boiler as well as the measuring units of each gauge. …… ……

Page 90

N/T	TASK
97	Sketch the parts of the main boiler or the auxiliary boiler and describe its operation. …… ……

Page 91

N/T	TASK
98	Describe the starting process of the main boiler or the auxiliary boiler. What safety measures are taken? …… ……

Page 92

N/T	TASK
99	Mention the tests performed for the good operation of the boiler and describe its stopping process. …… ……

Page 93

N/T	TASK
100	Sketch the fixed and sliding support points of the boiler. …… ……

Page 94

N/T	TASK
101	Sketch the water level indicators of a boiler and describe the way of their insulation and communication with the boiler drum. …… ……

Page 95

N/T	TASK
102	Mention the reasons why the full and the partial water discharge of a boiler (blowdown) is carried out and which actions are required to do so. …… ……

Page 96

N/T	TASK
103	Which are the daily or recurrent analyses of the water used in the boiler? …… ……
104	Which are the devices that help increase the degree of efficiency of the boiler and the installation in general, e.g. the preheater? Describe each device briefly. …… ……

Page 98

N/T	TASK
105	How is the feed water of the boilers degassed? …… ……

106	Description and verification of a boiler leak. …… ……

Page 99

N/T	TASK
107	Describe the maintenance work for the boiler and also any other repair or inspection performed during your seagoing service on board the vessel. …… ……

Page 100

ELECTRICITY – ELECTRICAL INSTALLATION

N/T	TASK
108	Fire-extinguishing operations in electrical installations. What fire-extinguishing means are used and what precautions must be taken? …… ……
109	What kind of first aid should be provided to people in case of electrocution? …… ……

Page 101

N/T	TASK
110	Which are the types of electricity? What is their voltage and their use aboard the vessel? …… ……
111	Which are the power sources of different voltage aboard the vessel? …… ……
112	What are the principal characteristics of the ship's generators? (voltage, intensity etc.) …… ……

Page 102

N/T	TASK
113	Explain the term “generator paralleling” and describe the process of “generator paralleling” aboard the vessel. …… ……
114	Which systems aboard the vessel does the emergency diesel generator supply? …… ……

Page 103

N/T	TASK
115	Which conditions make the connection to the electrical power network of the emergency diesel generator necessary? …… ……
116	Describe the process of activation and connection to the electrical power network of the emergency diesel generator. …… ……
117	Which are the basic parts of an electric motor? (direct or alternating current) …… ……

Page 104

N/T	TASK
118	Which recurrent inspections of generators and motors of alternating or direct current were performed during your seagoing service aboard the vessel? …… ……
119	What types of batteries are used aboard the vessel and what purpose do they serve? …… ……

Page 105

N/T	TASK
120	Where are the batteries located and what are the requirements for the space where there are batteries? …… ……
121	How often are the battery recurrent inspections performed and which of their main characteristics are monitored? (e.g. electrolyte level, charging level etc.) …… ……

Page 106

N/T	TASK
122	First aid provided in case the electrolyte comes in contact with the human body. …… ……
123	Which are the basic monitoring instruments on an electrical power distribution panel and which indications are displayed? …… ……

Page 107

VESSEL WITH A STEAM TURBINE PROPULSION INSTALLATION

(not to be completed by students who have signed on vessels with a diesel engine installation)

N/T	TASK
124	Complete the details of the steam turbine propulsion engine. Type and number …….. Manufacturer …….. R.P.M. …….. Number of boilers …….. Type of reduction gears …… Type of thrust bearing …….. Temperature and pressure of superheated steam in boiler(s) …….. Number of burners per boiler …….. Oil viscosity …… S.P. shaft power (KW) …… Specific fuel consumption (KGR/SHAFT KWH) …….. Condenser vacuum of main steam turbine (BAR) …… Overall capacity of fuel oil tanks (m^3) ……

125	Sketch the layout of the main engine steam flow from the boiler drum to the main condenser for manoeuvring ASTERN. Indicate the pressures and temperatures on the principal points on the sketch. …… ……

Page 108

N/T	TASK
126	Sketch the layout of the main engine steam flow from the boiler drum to the main condenser for manoeuvring AHEAD. Indicate the pressures and temperatures on the principal points, i.e. boiler – superheater – turbines – extractions – condenser. …… ……

Page 109

N/T	TASK
127	Sketch the layout (with reference to pressures and temperatures) of the steam flow for producing electricity from the boiler drum to the main or the auxiliary condenser.
128	Monitoring instruments for the operation of the turbine. Write the purpose, the source of operation and the units of measurement. …… ……

Page 110

N/T	TASK
129	General description of the main turbine reduction gears and the diesel generator turbine reduction gears. …… ……

Page 112

N/T	TASK
130	Which recurrent inspections were performed to the main turbine reduction gears and the diesel generator turbine reduction gears? …… ……
131	Describe the routine maintenance as well as any other repair or inspection of the turbine during your seagoing service on board the vessel. …… ……

Page 115

N/T	TASK
132	Sketch the following main engine networks. Use arrows for the flow of fluids. Write the purpose of every network and, if necessary, provide specific explanations accordingly. (A legend in Greek and English is required). 1. High pressure steam. 2. Auxiliary steam network. A description of the mechanism used for dropping the steam pressure must be included. 3. Condensation and supply (including the boiler). 4. Spare feed water mains with boiler. 5. Main and auxiliary cooling (sea) water mains. 6. Lubrication. 7. Fuel Oil from storage tanks to boiler burners. …… ……

Page 125

N/T	TASK
133	Describe the actions required for two boilers to communicate (i.e. one in full operational mode, while the other is in stoppage mode). …… ……

Page 127

N/T	TASK
134	What are the reasons for the emergency shut down of the boiler in the turbine installation (TRIP)? …… ……
135	Describe the maintenance work for the main and the auxiliary steam turbine condenser, as well as any other repair or inspection during your seagoing service on board the vessel. ……

Page 129

N/T	TASK
136	What is the lubricating oil gravity tank useful for in the turbine installation? …… ……
137	Mention the routine work performed to prepare the main steam turbine engine for the departure of the vessel, starting from “STANDBY” until the completion of departure and the beginning of the sea passage (“FULL AWAY”). …… ……

Page 131

N/T	TASK
138	Mention the routine work performed after a voyage in order for the vessel to enter port (arrival operations). …… ……

Page 133

N/T	TASK
139	Mention how the propeller reversal is carried out and describe it briefly. …… ……
140	Complete a logbook abstract of an engine watch for five consecutive days and attach it at the end of the on board training record book. …… ……

Page 134

N/T	TASK
141	Mention in order the actions performed in the following works for the good operation of the turbine installation. What will the consequences be if these works are not performed at all? 1. Putting out fires in the boiler furnace while the turbine is being fed with steam. 2. Vacuum loss in the main and the auxiliary condenser. 3. Drainage of the water level in the water indicators of the boiler. 4. Excess of black smoke in the exhaust of the funnel. 5. Soot removal from the boiler. …… ……

Page 143

VESSEL WITH A DIESEL ENGINE PROPULSION INSTALLATION
(INTERNAL COMBUSTION ENGINE)

(not to be completed by students who have signed on vessels with a steam turbine installation)

N/T	TASK
142	Type and number ……... Manufacturer …….. R.P.M. …….. Piston diameter …….. Piston travel …… S.P. shaft power (KW) …….. Number of cylinders …….. Fuel Oil viscosity …… Type of reduction gears (if available) …… Type of thrust bearing …….. Specific fuel consumption (kg/BHP.H or kr/kWh) …… Overall capacity of fuel oil tanks (m^3) ……
143	Which are the monitoring instruments for the operation of the internal combustion engine, what is the purpose, the source of operation and the units of measurement of each instrument? …… ……

Page 145

N/T	TASK
144	Sketch the following networks of the main engine and use arrows to show the flow of fluids. Write the purpose of every network and, if necessary, provide specific explanations accordingly. (A legend in Greek and English is required). 1. Lubrication. 2. Cooling of the main engine. 3. Sea water. 4. Fuel oil from storage tanks to burners. 5. Air intake, gas exhaust. 6. Starting air. 7. Cylinder and turbocharger lubrication. …… ……

Page 155

N/T	TASK
145	Mention if the main engine is of direct or indirect transmission (i.e. how the engine is connected to the propeller). …… ……
146	Where is the main engine flywheel located and why is it placed within the system? …… ……

Page 156

N/T	TASK
147	Mention how the propeller reversal is carried out and provide a general description. …… ……
148	Where is the expansion tank placed and what is its purpose? …… ……

Page 157

N/T	TASK
149	What are the turbochargers? How do they operate, where and why are they used? …… ……

Page 159

N/T	TASK
150	What are the reasons for the slow down of the main engine and where do these reasons effect? …… ……
151	What are the reasons for the shut down of the main engine and where do these reasons effect? …… ……

Page 160

N/T	TASK
152	Which special tools and gauges are used for dismantling, inspection and assembly of a piston, a jacket and the main bearings of the main engine? …… ……

Page 162

N/T	TASK
153	Mention the routine work performed to prepare the diesel engine for the departure of the vessel, starting from “STANDBY” until the completion of departure and the beginning of the sea passage (“FULL AWAY”). …… ……

Page 164

N/T	TASK
154	Mention the routine work performed after a voyage, in order for the vessel to enter port, starting from “STANDBY” until the engine telegraph is set to “FINISHED WITH ENGINE”. …… ……

Page 166

N/T	TASK
155	Mention the mechanisms and the softening chemicals used on board the vessel to check the hardness and the alkalinity of cooling water (PH and DH processing). …… ……
156	Complete a logbook abstract of an engine watch for five consecutive days and attach it at the end of the on board training record book. …… ……

Page 167

N/T	TASK
157	Mention in order the actions performed in the following works for the good operation of the main engine. What will the consequences be if these works are not performed at all? 1. Replacing main engine burners and their inspection. 2. Regulating the valves of the diesel engine. 3. Cleaning of the scavenging (inlet) pipe. 4. Cleaning the lubricating oil cooler and the fresh water cooler. 5. Measurements for the deflection of the crankshaft. 6. Obtaining indicator diagrams. 7. Loss of lubricating oil from sump tank more than usual. 8. Excess of black smoke in the exhaust of the funnel. …… ……

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