



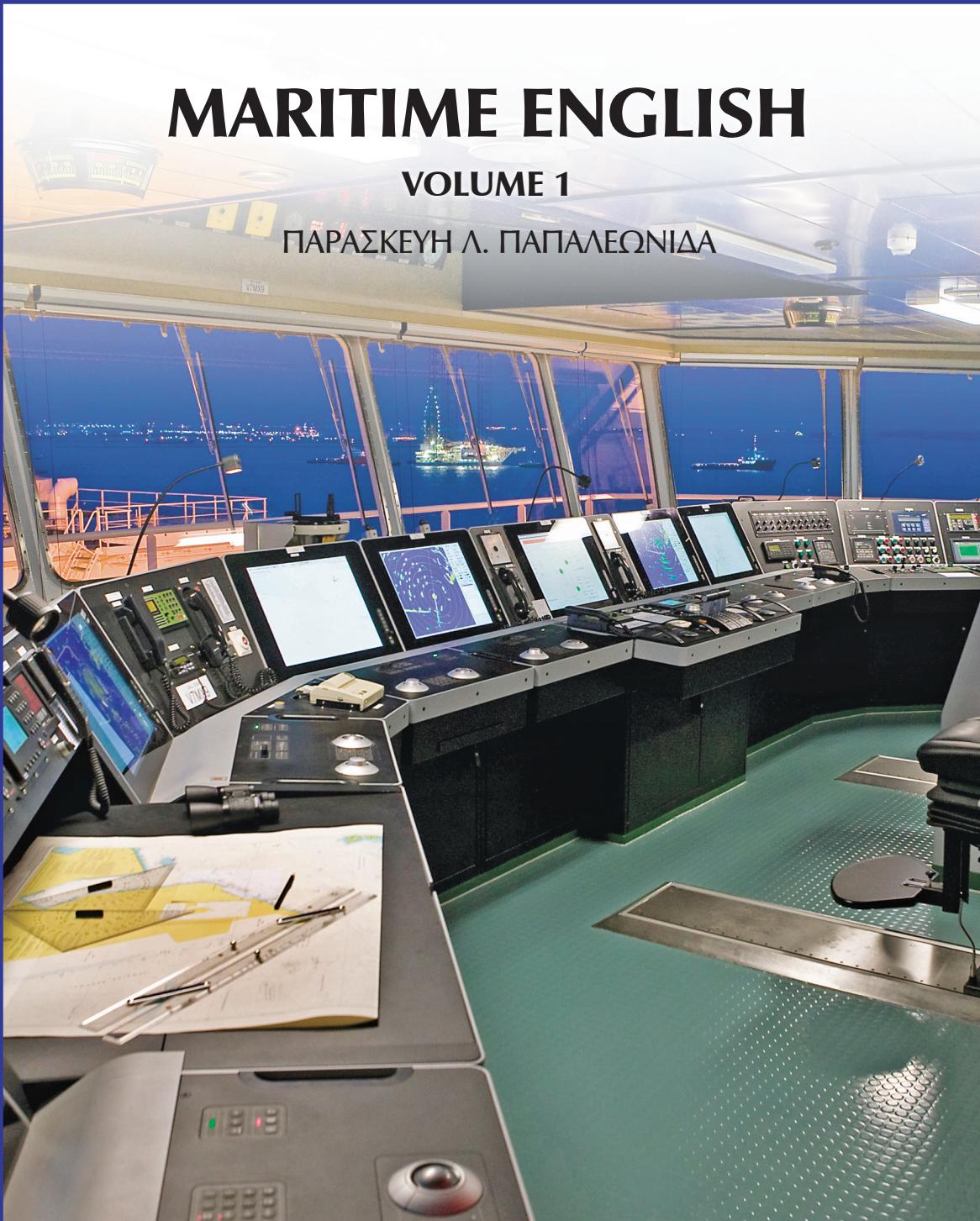
ΧΡΥΣΟΥΝ ΜΕΤΑΛΛΙΟΝ
ΑΚΑΔΗΜΙΑΣ ΑΘΗΝΩΝ

ΕΚΠΑΙΔΕΥΤΙΚΟ ΚΕΙΜΕΝΟ
ΑΚΑΔΗΜΙΩΝ ΕΜΠΟΡΙΚΟΥ ΝΑΥΤΙΚΟΥ

MARITIME ENGLISH

VOLUME 1

ΠΑΡΑΣΚΕΥΗ Λ. ΠΑΠΑΛΕΩΝΙΔΑ



CONTENTS

Table of Contents.....	9
------------------------	---

UNIT 1 IMO Standard Marine Communication Phrases

1. IMO Standard Marine Communication Phrases.....	16
2. Spelling, Numbers and Call Signs	17
3. What's the time?	19
4. Distress, Urgency and Safety Signals.....	20
5. PA announcements/Instructions on how to put on your lifejacket	21
6. Standard Wheel Orders (SMCP A2/1).....	22
I. Wheel / Helm Orders	22
II. Course to be steered by compass.....	23
7. Position; bearing; course; distance; speed; draught	24
8. Glossary	25
Round-up	32

UNIT 2 The Seafarer

1. Welcome on board. What is your seaman's book number?.....	34
2. Personal Information / Cadet Application Form	35
3. Merchant marine deck officer: Job profile.....	38
4. Ranks and roles: Officers	40
5. Ranks and roles: Duties of deck/engineer cadets.....	45
6. Ranks and roles: Ratings	49
Round-up	51

UNIT 3 Ship Familiarisation

1. Identifying parts of the vessel on diagrams	54
2. Shipboard positions.....	59
3. Terminology practice on parts of the ship	60
4. The Superstructure / Facilities in the accommodation.....	64
5. Recognising Ships	68
6. Merchant Vessels	70
Types of merchant vessels.....	70
7. Special Duty Vessels	76
Round-up	78

UNIT 4 Safety Equipment On Board

1. Safety of Life at Sea: The Convention.....	83
---	----

I. SOLAS and the LSA Code	83
II. Amendments to SOLAS '74 – the "Carriage of Immersion Suits" example.....	84
2. IMO Safety Signs.....	86
3. Safety On Board: Oral Commands	88
4. Location and Purpose of Safety Equipment	88
I. Where is the safety equipment? – checklists, inventories and safety plans	88
II. When do you require life-saving equipment?.....	96
5. SOLAS requirements: Surviving Disaster.....	97
I. The Titanic and SOLAS	97
II. Titanic life jacket.....	99
III. Describing survival equipment in writing	100
IV. Lifeboat drills.....	101
Round-up	102

UNIT 5 Work Activities On Board

1. The Voyage Route.....	104
2. Nautical Charts and Aids to Navigation	105
Aids to Navigation.....	106
3. What is happening on board now?.....	107
Work routines / activities taking place on board.....	110
4. Daily Routines	115
5. Standard Engine Orders.....	118
Round-up	122

REVIEW 1 Units 1-5

1. Announcement: The vessel	124
2. Crew ranks	124
3. Safety Equipment Regulations	124
4. Terminology Work	126

UNIT 6 Emergency On Board

1. Welcome back.....	132
2. Types of emergency on board	133
3. SMCP: Distress communications	134
4. Emergency and Rescue procedures / situations	136
I. Person Overboard	136
II. Urgent commands and «must».....	139
III. Hypothermia	141
IV. Enclosed space entry	142
V. Oil pollution.....	143
5. SMCP message markers	145
6. SMCP: Passenger Care	147
Round-up	151

UNIT 7 Cargo Handling, Quantities And Supplies

1. Different types of containers	154
--	-----

2. Cargo handling (SMCP B3)	156
3. Loading capacities and quantities	158
4. Cargo handling gear of different types of cargo ship	161
5. Inventory/ Ordering supplies	166
Round-up	169

UNIT 8 Vessel Particulars And Specifications

1. Comparing vessels	172
I. Vessel particulars and technical specifications	172
II. What are the world's largest ships?	174
III. Ship dimensions	176
2. Function and operation of equipment on board	177
I. Communication safety equipment	177
II. What do you use this for?	178
III. Describing shapes and dimensions	179
IV. Navigation and nautical equipment on the bridge	181
V. Radar controls	181
VI. NAVTEX	182
VII. Operation manuals: SART, Radar	183
VIII. Multi-word verbs for mechanical operations	184
IX. SMCP multi-word verbs for various operations	185
3. SMCP: Pilot on the bridge	185
Pilot Card Information	187
Round-up	187

UNIT 9 What Weather Is Expected?

1. Weather conditions	191
I. Types of weather	191
II. What's a tsunami?	193
2. Weather forecasts	194
I. Weather maps: current and anticipated weather	194
II. Maritime forecast	197
III. VHF weather forecast	204
3. SMCP	205
I. Safety communications and briefing on meteorological conditions [A1/3.1 & B1/1.5]	205
II. NAVTEX abbreviations for weather forecasts	207
III. Message markers: Warning, Advice, Request, Intention	208
Round-up	209

UNIT 10 Past Voyages And Sea Passages

1. A ship's past voyage	212
2. Reporting events that occur during a sea passage	214
I. Ports of call	215
II. Deck log book entries	217
3. Lights, shapes and sound signals	219
Round-up	221

REVIEW 2
Units 6-10

1. The Mariner's Handbook: useful abbreviations.....	224
2. Emergency situation: Fire.....	225
3. Pilot boarding	226
4. Container vessel information.....	229
5. Satellite Radar: Looking into the oceans.....	229
6. What are tides?	230
7. Terminology Work	230

UNIT 11
Incidents And Accidents At Sea

1. Reporting details of incidents at sea	238
Story in the news	238
2. The nature of various types of incidents at sea	241
I. Classification / Definitions	241
II. Key vocabulary from report forms	244
3. Types of incidents	247
4. Marine Accident Reports	250
5. VHF communications for distress and urgency messages [SMCP A1/1.1.3-4, A1/2.1-2.2]	253
I. SMCP for distress communications regarding collision and grounding.....	253
II. SMCP for urgency communications regarding engines / equipment and cargo problems	254
Round-up	255

UNIT 12
I Require Medical Assistance

1. Personal Injury	258
I. Types of injury / Parts of the body	258
II. Describing injury	261
2. First Aid	264
I. First aid advice	264
II. First aid kit	266
III. The ABC of Resuscitation	268
3. Personal Protective Equipment.....	271
4. Occupational Accidents	278
I. Slips, trips and falls	278
II. Common injuries on board: causes and prevention.....	280
5. SMCP: Occupational Safety [B2/2] / Requesting Medical Assistance [A1/1.3]	281
Round-up	284

UNIT 13
Call The Watch Engineer

1. Bunkering	286
I. Procedures and responsibilities	286
II. Checklists and controls	290
2. Preventing / Combating oil spills	293
I. Oil spill prevention	293
II. VHF Communications / SMCP.....	294

3. Maintenance duties in the deck department	298
I. Mooring line care	299
II. Painting	299
III. Permit-to-work	302
Round-up	304

UNIT 14 PLS ADV ASAP

1. Maritime communication systems.....	308
2. Understanding telex messages	310
I. Telex abbreviations / format	310
II. Producing telex messages	314
3. Requesting and giving advice.....	318
4. VTS Standard Phrases (IMO SMCP: A1/6).....	320
5. Future events	327
I. What is going to happen?.....	327
II. Future plans	329
Round-up	330

UNIT 15 I Read You Good

1. Accidents and radiotelephone communication at sea.....	334
2. IMO guidelines on the use of VHF at sea	338
3. VHF communication procedures: format and protocols	340
4. GMDSS and DSC	349
5. Routine traffic.....	353
6. What were you doing at the time of the accident?.....	354
Round-up	355

REVIEW 3 Units 11-15

1. Incidents	356
2. Very serious casualties: Lessons learned	357
3. Occupational hazards: working outboard	359
4. Communications / SMCP	361
5. Understanding mooring incidents	363
6. Accident case: Slippery when wet.....	365
7. Terminology Work	367

APPENDIX I English for Marine Engineers.....	373
Part One	373
1. Workshop Tools	373
Review of machine and hand tools used in metal work	384
2. Marine Diesel Engine Components	387
3. Follow-up	396
Part Two	399
1. Diesel Engine Operation.....	399
I. The engine room.....	399
II. Diesel engine components	400

III. The 4-stroke and 2-stroke cycles	404
IV. The turbocharger	408
2. Boilers.....	410
I. Types of boilers	413
II. Boiler mountings.....	414
3. Steam Engines	416
I. Reciprocating steam engines	417
II. Steam turbines	419
4. Auxiliary Machinery	426
5. Pumps	432
I. Displacement pumps.....	433
II. Centrifugal pumps.....	435
6. Visitors on board	441
I. What does s/he look like? People's physical appearance.....	441
II. What is s/he wearing? Clothing for work and casual wear.....	443
III. What is s/he like? People's character	445
Part Three	450
1. Fuels	450
I. HFO / MDO.....	451
II. Marine Fuel Oil Standards	455
III. Fuel Oil System	457
IV. Fuel Injection	463
2. Lubrication	467
I. Lubricating Oils	467
II. Lubrication of Diesel Engine / Lubricating Oil System.....	470
3. Maintenance of Diesel Engines (I)	478
I. Maintenance Work	478
II. Maintenance and Safety	483
4. Safety in the Engine Room	486
I. Housekeeping guidelines	486
II. Instructions to the Engineer of the Watch	488
APPENDIX II Pair work: Student B material.....	492
APPENDIX III Audio material transcripts	497
Part One	497
Part Two	507
Part Three	513
APPENDIX IV Nautical Chart Symbols.....	520
APPENDIX V Grammar.....	521
1. Present Continuous (Progressive)	521
2. Present Simple	522
3. Present Simple vs. Present Continuous	523
4. Comparative and Superlative adjectives	524
5. "Will" / "be going to" in weather forecasts	525
6. Past Simple (Regular and Irregular verbs)	526
7. Past Simple (questions and negatives)	527
8. Present Perfect (Regular and Irregular verbs).....	528
9. Talking about the future: future plans / events.....	529
10. Past Continuous	531
BIBLIOGRAPHY	532

5. Ranks and roles: Duties of deck/engineer cadets

A. "My Life at Sea"

a) Lead-in. Look at the pictures and match them to the following titles.

Fire drill Abandon ship drill Drill review meeting Lifeboat release hook



b) Read the following entry to a blog site with the title "My life at sea". Then complete the word webs.



This is my first experience on a merchant vessel. I study Nautical Studies and my curriculum requires seagoing service for a period of 12 months. I will be on board M/V Aurora Leigh for 6 months. I live and work with an international crew, speaking English 24 hours a day. I enjoy my work on board and look with anticipation into the next weeks on board the vessel.

What are the duties of a deck cadet on board? There are two parts in my working day. First I assist on the bridge; and the other part of my activities has to do with the maintenance of the ship.

Every week there are fire drills and abandon ship drills. I have my station bill card where I read what my duties are in emergency situations. Equipped with helmet and life jacket, I go to the muster station. After every fire drill we have an abandon ship drill. During this drill everybody learns how to use the lifeboats, start the engine and use the release hook. Afterwards everybody meets on the

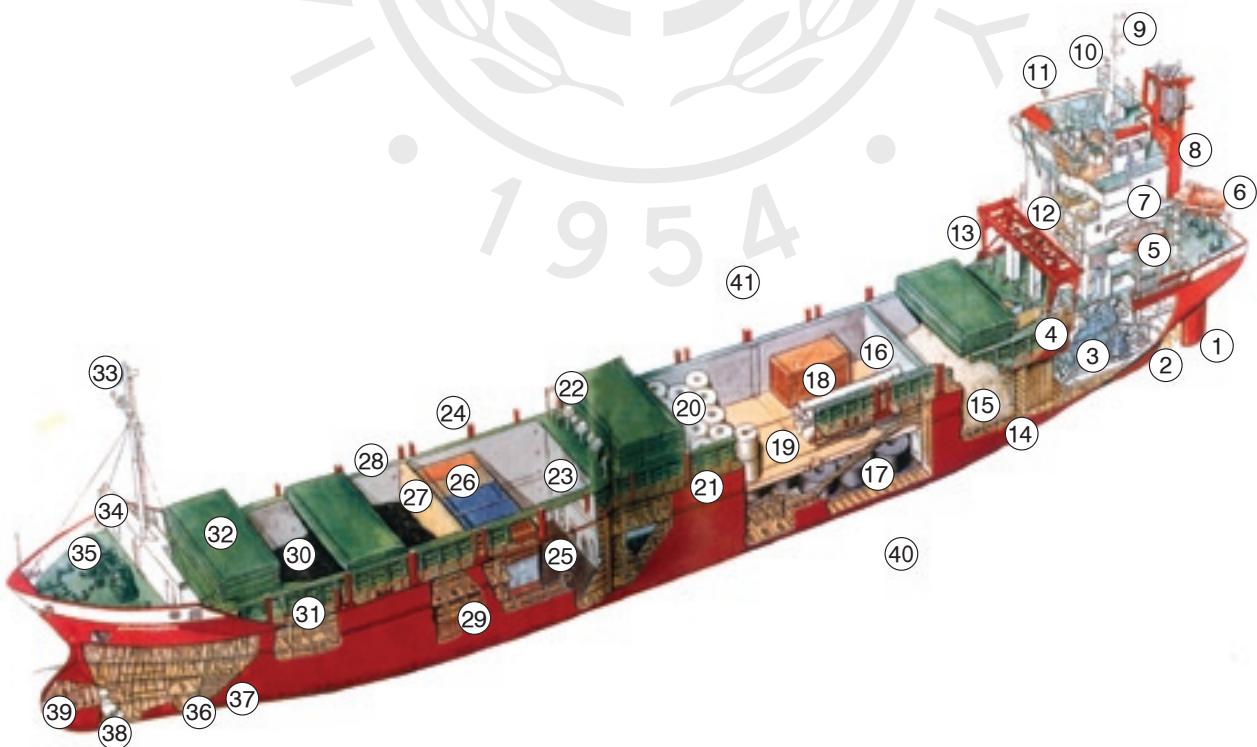


Glossary

ballasting	using water as ballast (in ballast tanks) for keeping the ship stable
trimming	to balance a ship by shifting its cargo
watertight	constructed so tightly as not to leak any water
vertical	the opposite of horizontal
separate	divide, come between
increase	become greater, larger
discharging	unloading
mooring	securing a vessel by cables, wires or ropes to a dock or to a buoy or anchoring with 2 anchors
mooring winch	a machine on a ship used to haul in mooring lines when securing the ship to a pier / wharf / quay

b) Find the following parts on the picture of the Capricorn below.

- No 39 Forepeak tank in bulbous bow
- No 35 Anchor windlass on the forecastle
- No 8 Funnel with all exhaust pipes
- No 1 Rudder
- No 16 / No 23 / No 27 Vertical Bulkheads
- No 19 'tween-decks
- No 12 Accommodation
- No 32 Stacked Hatches



1. The Voyage Route



"1000 nautical miles in the Mediterranean"

Listen to the Chief Officer describing the charted route to the Captain and do the exercises that follow:

A. Draw the route on the map.



B. Listen again and circle the correct distance.

Passage Plan

From	To	Distance (in nautical miles)
Genoa	Marseille	204 / 240 NM
Marseille	Barcelona	207 / 211 NM
Barcelona	Valencia	130 / 180 NM
Valencia	Cartagena	122 / 172 NM
Cartagena	Gibraltar	237 / 277 NM



Glossary

Traffic Separation Scheme (TSS)

a routeing measure which separates opposite streams of traffic and establishes traffic lanes

A. Close listening. Listen carefully to the following passage from an interview and correct the mistakes. Identify which five words are incorrect, even though they sound similar to the correct ones.



"Nautical charts contain information about the shape of the coast, the lengths of the water and the general configuration of the button of the sea floor. Nautical charts also show locations of obstacles to navigation, the rise and fall of the tights, and locations of navigation gates. Nautical charts make safe and efficient marine transportation possible."

– Aids to Navigation

a) Fill in the blanks with the words in the box.

hazards	floating	location	conformance	navigate
---------	----------	----------	-------------	----------

Aids to Navigation

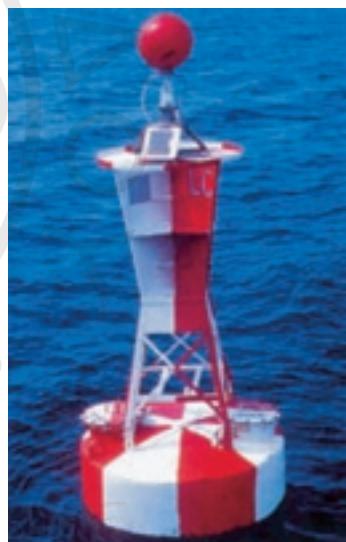
Unlike the roads and highways that we drive on, the waterways we go boating on do not have road signs that tell us our (1) _____, the route or distance to a destination, or of (2) _____ along the way. Instead, the waterways have AIDS TO NAVIGATION (or ATONs), which are all those man-made objects used by mariners to determine position or a safe course.

The term "aids to navigation" includes buoys, day beacons, lights, lightships, radio beacons, fog signals, marks and other devices used to provide "street" signs on the water.

The term "aids to navigation" encompasses a wide range of (3) _____ and fixed objects (fixed meaning attached to the bottom or shore), and consist primarily of:

- **Buoys** – floating objects that are anchored to the bottom. Their distinctive shapes and colours indicate their purpose and how to (4) _____ around them.
- **Beacons** – structures that are permanently fixed to the sea-bed or land. They range from structures such as lighthouses, to single-pile poles.

Aids to navigation systems are in (5) _____ to the International Association of Lighthouse Authorities (IALA), which is an international committee that seeks to ensure safe navigation, primarily through the use of common navigation aids and signals.



Buoy: Safe Water Mark



Glossary

determine
encompass
attach
primarily
distinctive

ascertain or establish definitely by calculation
include or contain comprehensively
fasten, join
mainly, chiefly
individually characteristic, distinguishing

2. inflatable / adaptable / convertible / compatible
3. spring / floating / towing / buoyant
4. Position / Place / Location / Point
5. evacuation / abandon / emergency / urgency
6. spotlight / torch / illumination / lantern
7. incidents / errors / happenings / disasters
8. figure / sum / profile / number

National Standard for Commercial Vessels (NSCV) – PART C 7A

Your new safety equipment (1)



REQUIRED SAFETY EQUIPMENT

Class 2C Non-Passenger Vessels – 60 metres or longer

Seagoing Non-Passenger Vessel, 60 metres or longer, for use in all operational areas up to and including Restricted offshore operations. (*Restricted offshore operations: operations within a limit of 50 nautical miles seaward from designated smooth or partially smooth waters, designated restricted offshore waters or a safe haven*)

	Liferafts and rescue boats <ul style="list-style-type: none"> * (2) Coastal Liferaft(s) for 100% of allowable crew and any other persons on board plus a non-SOLAS Rescue Boat. - Vessels continuously engaged on voyages in operational areas with a monthly mean temperature of 15°C or less must carry an anti-exposure suit for each person assigned to crew the Rescue Boat.
	Lifebuoys <ul style="list-style-type: none"> * 8 x Lifebuoys: 2 with a light; 2 with a light and smoke signal; 2 with a (3) line; 2 of operator's choice.
	Life jackets <ul style="list-style-type: none"> * Coastal Life Jacket with a light for 100% of allowable crew and any other persons on board.
	Distress signals <ul style="list-style-type: none"> * 1x 406MHz Electronic (4) Indicating Radio Beacon. * 3x Parachute distress rockets. * 2 x Red hand-held flares. * 1x Orange hand-held smoke flares.
	On-board communications and alarm systems <ul style="list-style-type: none"> * General (5) alarm system.
	Emergency lighting (hand-held) <ul style="list-style-type: none"> * 1x Battery operated (6) for each crew member.
	Medical Supplies <ul style="list-style-type: none"> * Annex H: Scale F of Table H-3 <ul style="list-style-type: none"> - The quantity of medical supplies identified in Annex H is based on (7) involving 1 or 2 persons only. - Medical supplies will need to be expanded in accordance with the particular risks inherent to the voyage and the (8) of persons on board.

ii. Match the phrases to make full sentences. Put the correct number in each box.

In the event of a Man Overboard the following steps should be implemented:

- | | |
|--------------------------|--|
| 1. You must shout ... | <input type="checkbox"/> visual contact. |
| 2. You must throw ... | <input type="checkbox"/> "Man Overboard! Starboard / Port side!" |
| 3. You must maintain ... | <input type="checkbox"/> the vessel away from the side that the person went overboard. |
| 4. You must raise ... | <input type="checkbox"/> a Williamson Turn. |
| 5. You must inform ... | <input type="checkbox"/> the nearest lifebuoy overboard. |
| 6. You must turn ... | <input type="checkbox"/> additional lookouts. |
| 7. You must do ... | <input type="checkbox"/> the alarm. |
| 8. You must post ... | <input type="checkbox"/> the bridge. |

a) Look at the pictures of the following safety poster.

What *must* you do when you notice a man overboard and you are...

– on deck? – on the bridge? – at sea? – at anchor or in harbour?

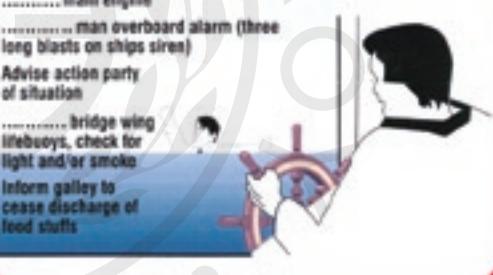
1 Immediate actions - Deck

- nearest lifebuoy towards casualty
- bridge/..... the alarm
- Summon assistance
- Keep casualty in sight
- Advise action party of situation



2 Immediate actions - Bridge

- Helm hard over to casualty side
- main engine
- man overboard alarm (three long blasts on ships siren)
- Advise action party of situation
- bridge wing lifebuoys, check for light and/or smoke
- Inform galley to cease discharge of food stuffs



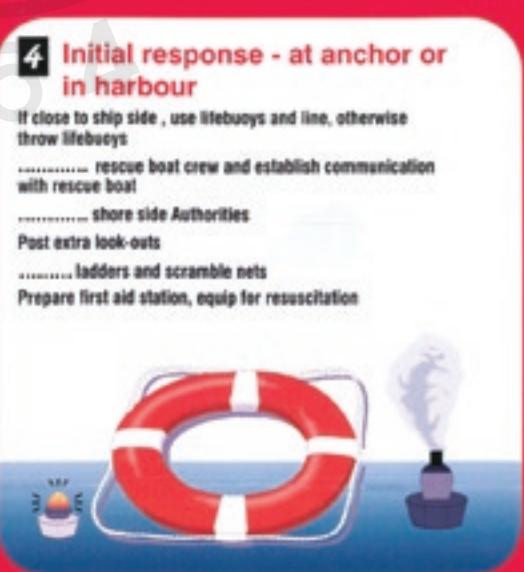
3 Initial response - at sea

- Commence ships turn
- extra look-outs with binoculars
- Ready and rescue boat when casualty visible
- Rig ladders and scramble nets
- Prepare first aid station, for resuscitation



4 Initial response - at anchor or in harbour

- If close to ship side , use lifebuoys and line, otherwise throw lifebuoys
- rescue boat crew and establish communication with rescue boat
- shore side Authorities
- Post extra look-outs
- ladders and scramble nets
- Prepare first aid station, equip for resuscitation



1. Different types of containers

Lead-in: *Look at the following list of containers.*



- chest / box / case
- pallet / crate / carton
- barrel / drum / cask
- sack / bag / bale

1. How many of these words do you know?
2. Can you identify any of these containers in the pictures below?
3. Which ones are cylindrical, square or rectangular?
4. Which ones are made of wood?
5. What other material are they made of?
6. Which ones can you carry liquids in?

A. *Write a caption under each picture. Here are some useful words.*

equipment shipping cases	steel barrels	cotton bales
drum	sea chest	crate
configuration of pallets	sacks	drums / barrels on ship
casks	pallet	



(a).....



(b).....



(c).....



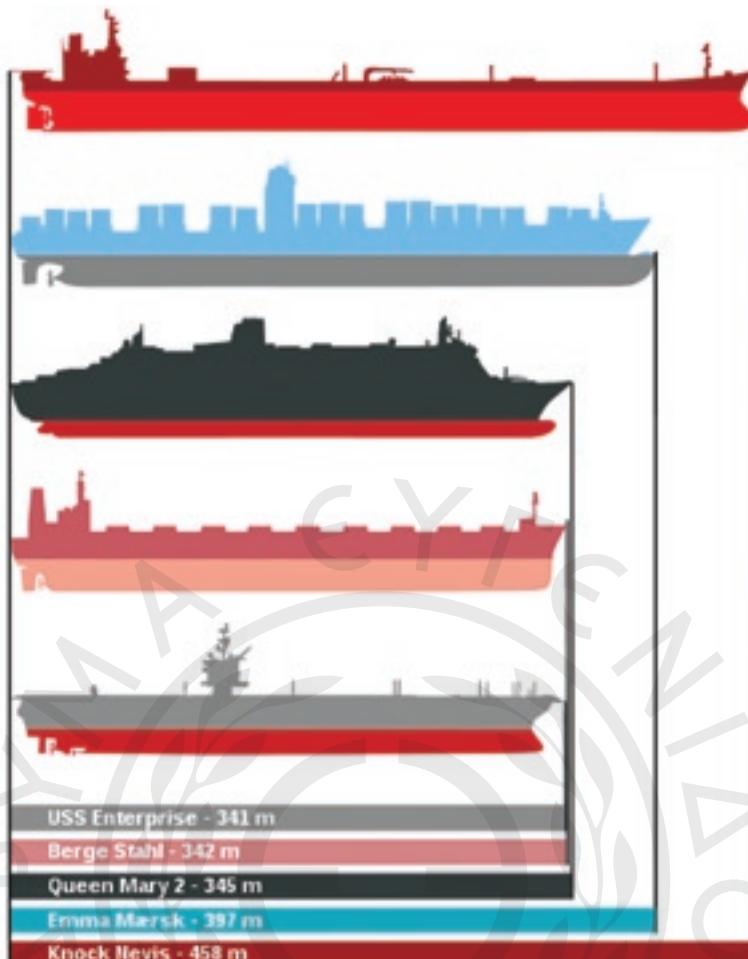
(d).....



(e).....



(f).....



Glossary

allure	quality of being powerfully and mysteriously attractive and fascinating
sister ship	a ship that is one of two (or more) similar ships built at the same time, a ship of the same class and identical design to another ship
feature (v)	to have as a prominent attribute or aspect
maiden voyage	the first voyage of a ship
scrap	to discard or remove from service (an old or inoperative vessel), especially so as to convert it to scrap metal

ii. In pairs, ask and answer the following questions. Add some of your own questions, like the ones given, to compare the ships.



1. What is the world's largest ship in operation now?
2. Which one is bigger, the Queen Mary or the Oasis of the Seas?
3. Is the world's largest bulk carrier longer than the largest container ship?

REQUIRED BOARDING FOR PILOT

In accordance with I.M.O. requirements and I.M.P.A. recommendations

(2) FOR FREEBOARDS OF 9 METRES OR LESS

HANDHOLD
STANCHIONS
min. diam. 32mm
120cm apart
above bulwark
min. 70cm
max. 80cm. apart

SPREADER
Min. 180cm long
Max. 8 steps between
spreader

IF REQUIRED
BY PILOT

Always flat
side of ship

SIDES ROPES
Min. diam. 18mm
30-38cm

STEPS
Must rest against
ship's side

5th step must
be a spreader

Height required
by pilot

SHIPS WITH HIGH FREEBOARD (MORE THAN 9M)

When no side door available

PILOT LADDER
Must extend at
least 2 metres
above lower
platform

ACCOMMODATION LADDER
Should rest firmly against ship's side
Maximum 35° slope
Lower platform horizontal
Rigid handrails preferred

A PILOT LADDER COMBINED
WITH AN ACCOMMODATION
LADDER is usually the safer
method of embarkation or
disembarking a pilot on ships with
a freeboard of more than 9 metres
Recommended
9 metre mark
Stem ↔ Bow

3 to 7 metres depending on size
of pilot launch and height of swell
2m
2m
0.5m

5th step must
be a spreader

Height required
by pilot

MECHANICAL PILOT (3)

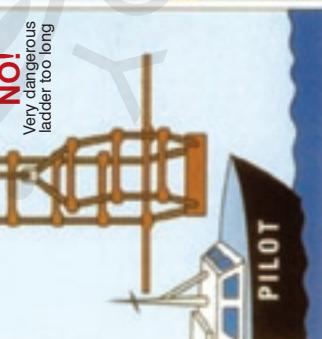
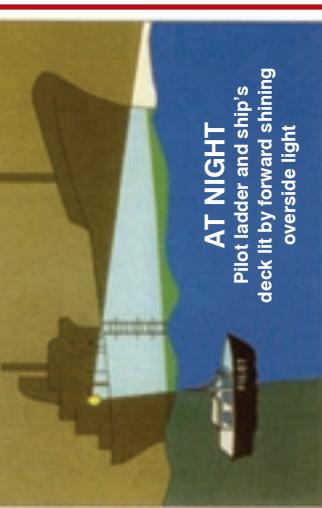
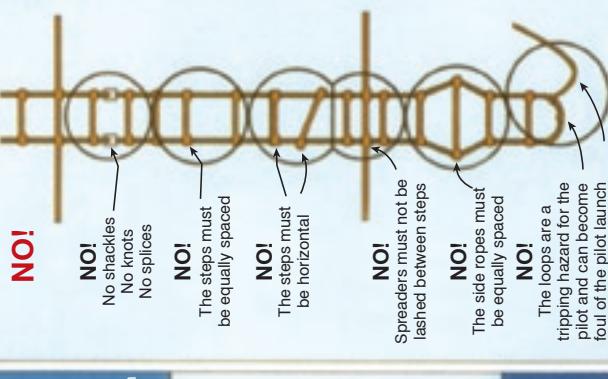
Two man-ropes
ready for
immediate use
Min. diam. 28mm

Davit
Guard
ring
Rigid part
Flexible part

A pilot hoist made and rigged in accordance with
SOLAS Chapter V, together with a pilot ladder,
subject to agreement for immediate use by the Master and the
Pilot. It should be noted that the distance between the
nearest side ropes of the pilot hoist and pilot
ladder will be at least 1.4 metres.

Two handhold stanchions rigidly
secured to ship's structure
Responsible
officer
NO OBSTRUCTIONS
Bulwark ladder secured to ship
Lifebuoy with
self-igniting light

AT NIGHT
Pilot ladder and ship's
deck lit by forward shining
overside light





B. Fill in the blanks with the following words (there are two extra words you do not need to use).

reefer	shipyard	gear	grab
flag	pipe	capacity	

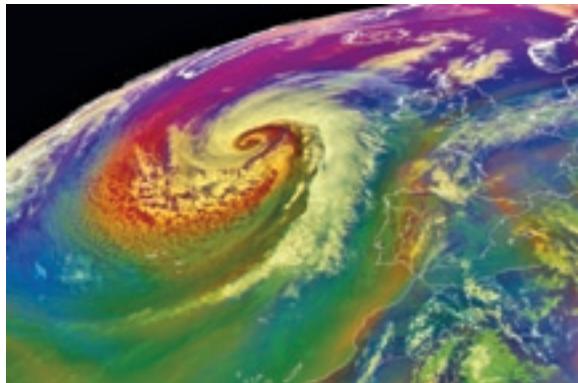
M/V MAERSK BUFFALO is a container ship completed in 2007 in a German _____ and flies the _____ of Denmark. Its maximum TEU _____ is 4,300, and it can carry 1,400 TEU _____ containers. It has no handling _____ of its own.

C. Fill in the missing words.

relative	range	operation
switched	unreliable	manual

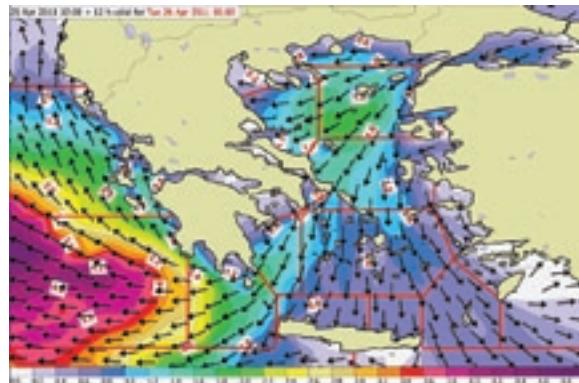
I will give you a briefing on status of navigational aids and equipment:

1. Port side / starboard radar is at 10 miles _____ scale.
2. The radar is _____ head-up.
3. GPS is not in _____.
4. The echo-sounder recordings are _____.
5. I changed to _____ steering at 12.00 hours UTC.
6. Navigation lights are _____ on.



(c)

1. Satellite map with tropical cyclone over North Atlantic.
2. Weather map with weather forecast for North Atlantic.



(d)

1. Wind forecast map: wind force and direction for Greece.
2. Wave forecast map: wave height and direction for Greece.



(e)

1. Sea spray created by large waves.
2. Floating ice around the vessel.



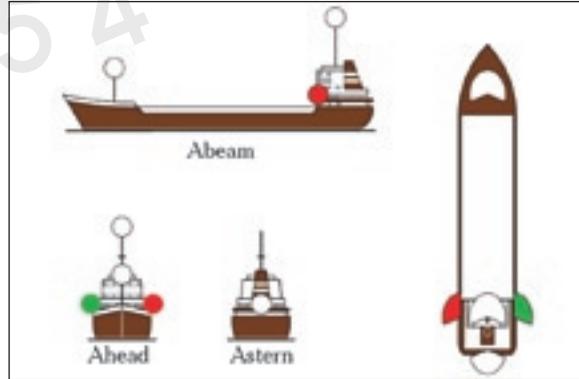
(f)

1. Extreme ice conditions, moderate visibility.
2. Following an icebreaker, poor visibility.



(g)

1. Pilot disembarkation in extreme ice conditions.
2. Towing in extreme ice conditions.



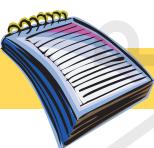
(h)

1. Power-driven vessel underway: Rule 23.
2. Anchored vessel: Rule 30.

C. Put the words in the correct list. Some are given as examples.

Dust mask	Thermal gloves	Welding gauntlets	Impact gloves	Full face mask
Safety boots	Latex gauntlets	Arc welding helmet	Barrier cream	Ear plugs
Riggers gloves	Hard hat	Ear defenders (ear muffs)	Boiler suit	Thermal suit
Half face mask	PVC gloves	Wellington boots	PVC wet suit	Safety shoes

Head protection	Foot protection	Hand protection	Respiratory protection	Skin protection	Hearing protection
		Riggers gloves		Boiler suit	Ear defenders (or ear muffs)



Glossary

gauntlet

riggers gloves

respiratory

a strong long glove with a wide covering for the wrist

gloves for rigging, fitting equipment, handling ropes, etc.

connected with breathing

D. Match the PPE words given in the table above to the correct picture/description below.

1.	 dust mask Protects from: non-toxic, heavy dust particles such as some cargo dusts and abraded paint dust.
2.	 Protects from: arc welding light, radiation and splatter (also, a flame retardant scarf and apron should always be worn when arc welding).
3.	 Protects from: falling objects, swinging lines, hair entanglement, chemical, paint and hot water drips.



5. The tanker under the bridge.



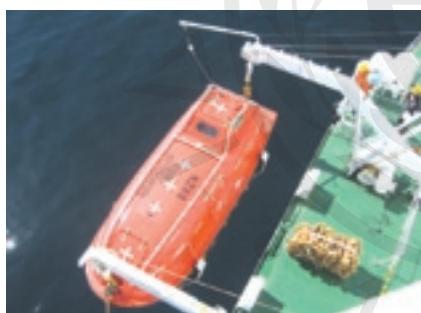
6. The crew members the cargo hoses.



7. The vessels each other for an STS operation.



8. The helicopter on the vessel.



9. They the lifeboat.



10. The tugs the vessel.



11. They the containers.



12. They the fenders.

DSC provides a simple and reliable means
 (4)..... contact prior to starting voice communication. The DSC controller sends a digital signal that will ring other DSC radios by triggering an alarm and displaying details about the caller and the nature of the call. The digitally transmitted information (e.g. MMSI number, distress position) is displayed in writing. When a DSC call is received by another station, its VHF radio
 (5)..... and details of the call are displayed. Once a DSC call has been transmitted to a particular station or to all stations in the area, a voice message should be sent in the normal way.

A Received DSC message contains the following:

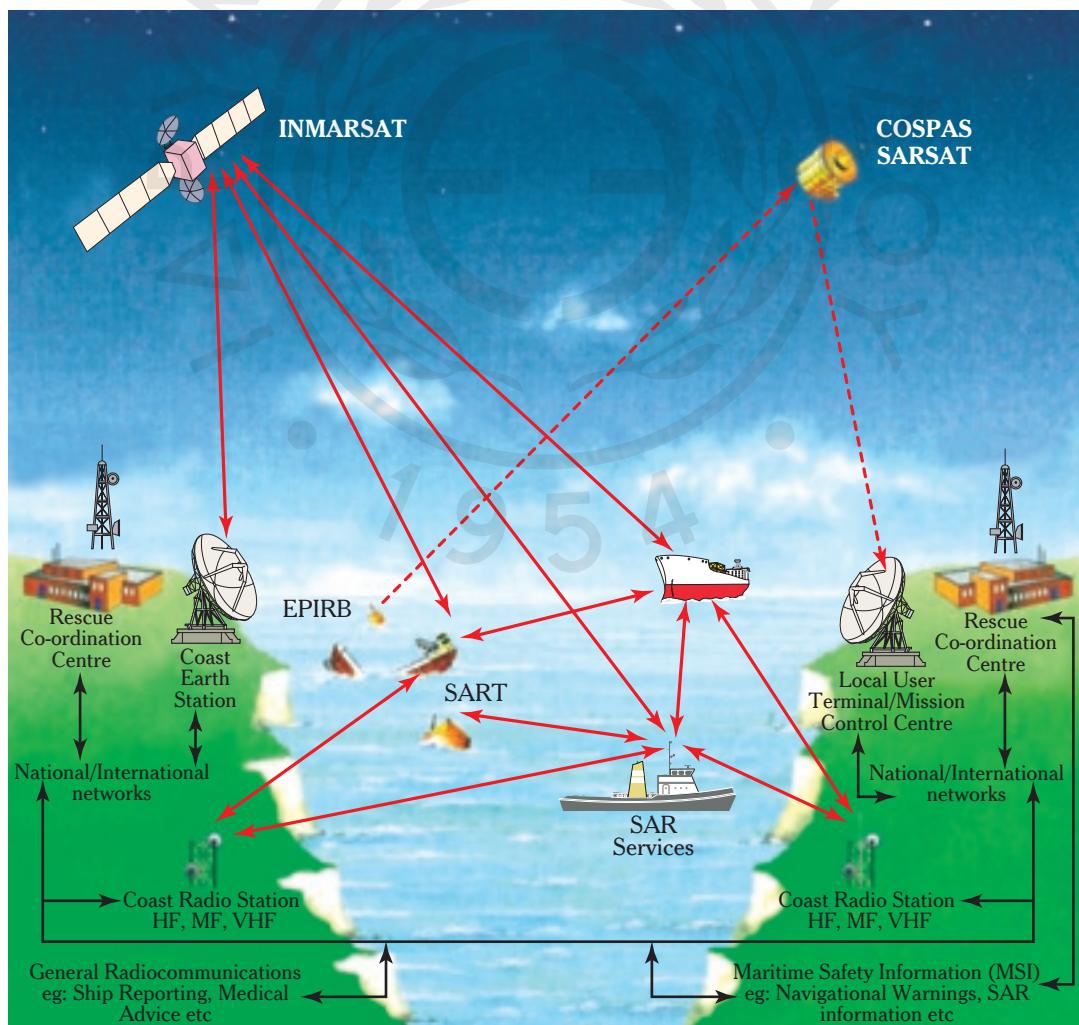
From: MMSI number

Nature of distress: explosion / fire, flooding, collision, grounding, listing, sinking, (6)....., piracy, undesigned distress.

UTC

Lat, Long, bearing or range

disabled & adrift	under GMDSS	full implementation
starts ringing an alarm	specified	of establishing



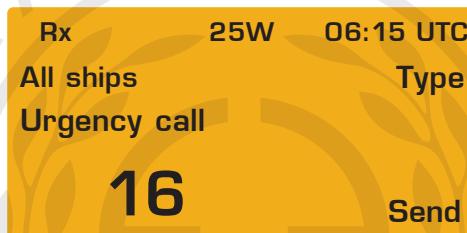


VHF Marine Transceiver with DSC



URGENCY MESSAGE (GMDSS vessels)

- i. Urgency announcement sent by DSC:



- ii. The following calling sequence is transmitted by DSC:

Format specifier	Category	Self identifier	Frequency or channel	Subsequent communications
All ships	URGENCY	259896000	Channel 16	radiotelephony

All ships urgency announcement by Doris (259896000).

- iii. Urgency call and message by voice:

PAN PAN PAN PAN PAN PAN
ALL STATIONS ALL STATIONS ALL STATIONS
 THIS IS TWO FIVE NINE EIGHT NINE SIX ZERO ZERO ZERO MOTOR
 TANKER DORIS
CALL SIGN LIMA ALFA GOLF PAPA FIVE
POSITION FOUR FIVE DEGREES FOUR SIX MINUTES NORTH ZERO
 ZERO ONE DEGREES THREE ZERO MINUTES WEST
 I HAVE PROBLEMS WITH ENGINES, HEAVY FISHING NET HAS FOULED
 MY PROPELLER, I AM DRIFTING TOWARDS MILE ROCK DUE TO A
 CURRENT OF THREE DECIMAL FIVE KNOTS
OUT



Cutter
a tool for cutting



Side cutter
diagonal cutting pliers,
used for cutting wire



Hacksaw
a saw with a narrow
blade set in a frame,
used for cutting metal



Cutting torch
a device that uses fuel
gases and oxygen to cut
metals

machining and ... hammering



Mallet
a hammer with a
large wooden (or
plastic) head



**Straight-peen (or "pein")
hammer**
a hammer with a flat
striking face on one end
of the head for striking
punches and chisels



**Ball-peen (pein)
hammer**
a hammer with one
end of the head flat
and the other end
rounded, used for
forming soft metal



Centre punch
a small steel tool with a
conical tip used to punch
a small indentation at the
location of the centre of a
hole to be drilled



Cold chisels
tools with cutting
edges used for
cutting and shaping
cold metal (they
are struck with a
hammer)

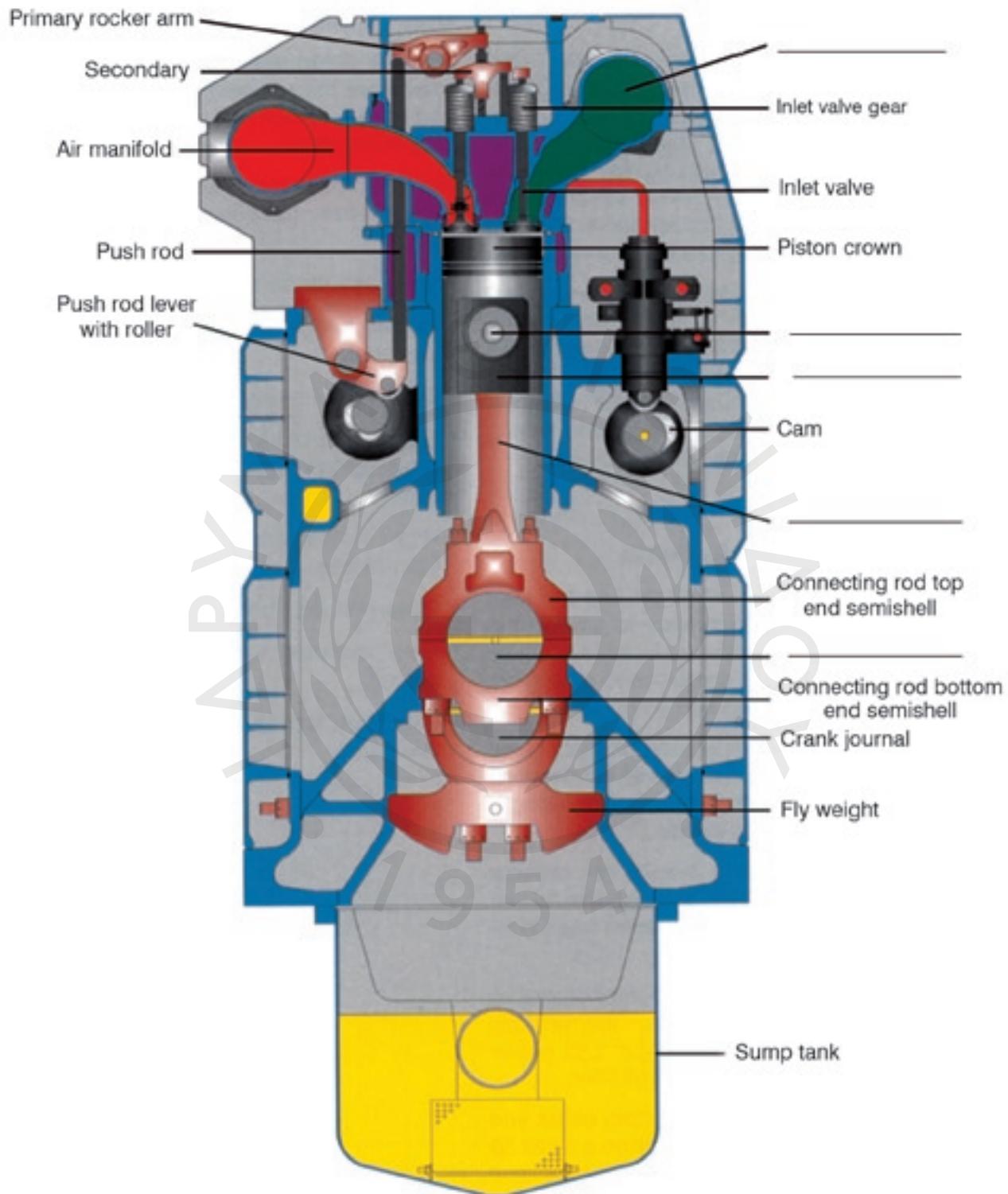


Fitter's vise (or vice)
a metal tool with
movable jaws which are
used to hold an object
firmly in place while
work is done



Conventional lathe

A lathe is a machine tool which turns cylindrical material, touches a cutting tool to it, and cuts the material in order to shape it. It is used to perform various operations such as sanding, drilling or deformation.

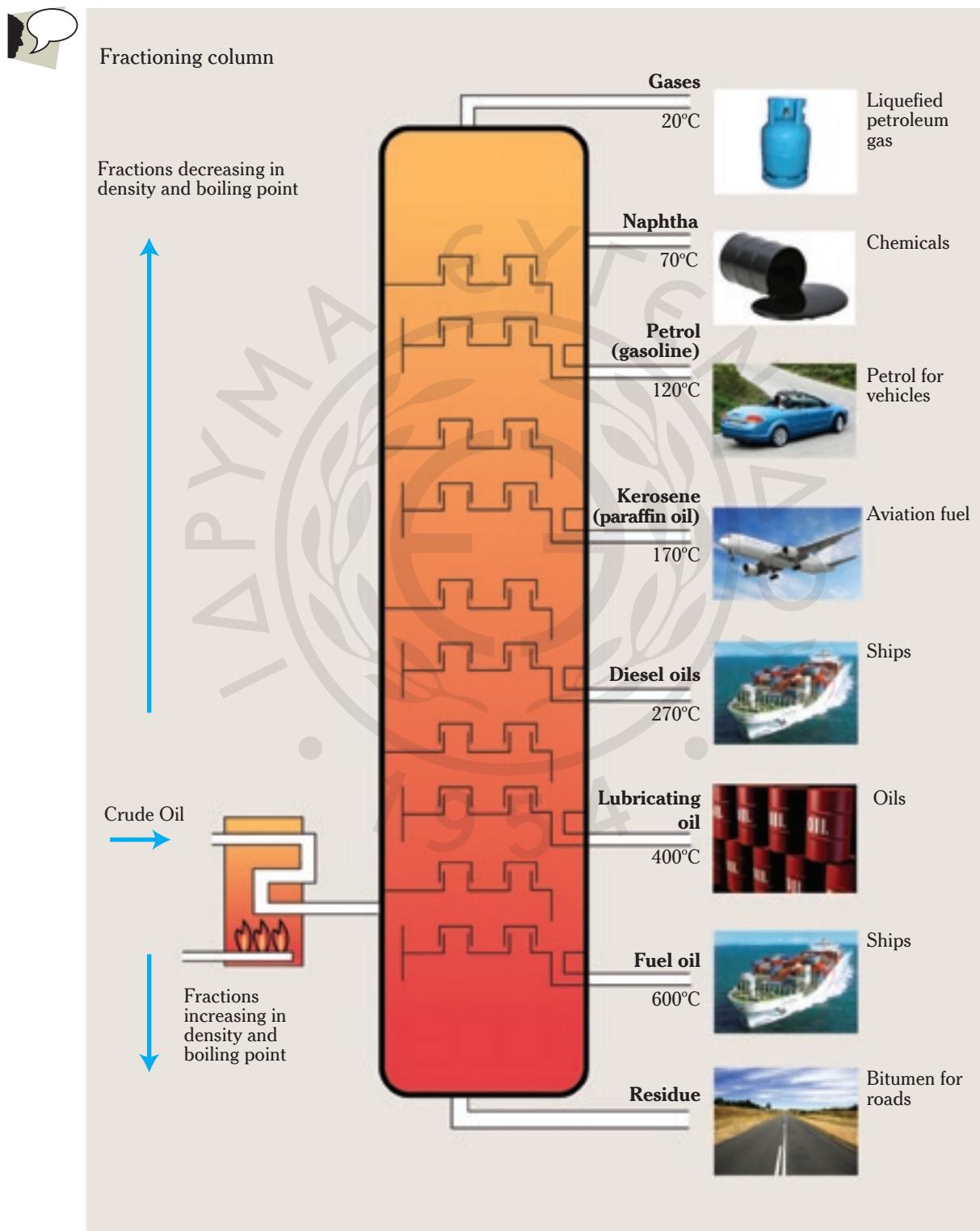


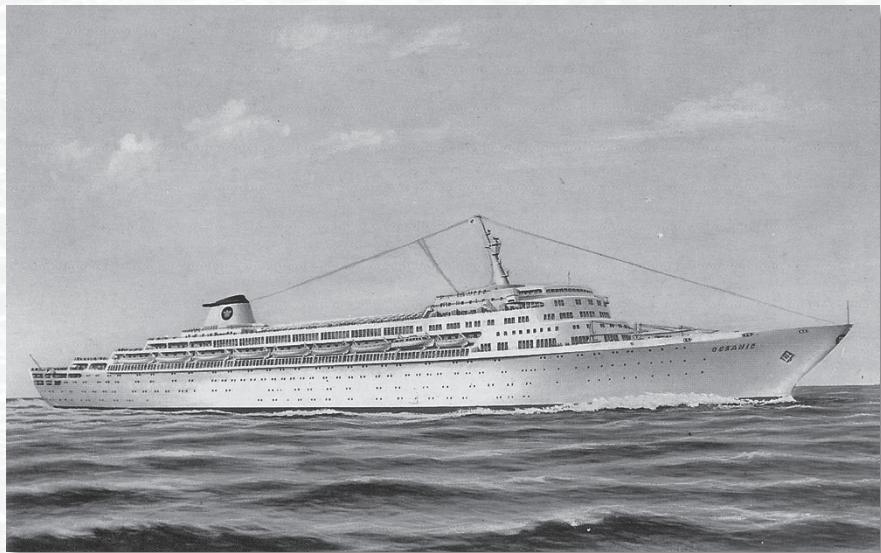
Four-stroke Diesel engine

I. HFO / MDO

Lead-in:

A. What is going on in this tower (column)?





Το κρουαζιερόπλοιο «Oceanic» της Home Lines Inc.
ναυπηγημένο το 1965.

Κωδικός βιβλίου: 24-0595
ISBN (SET) 978-960-337-122-9
ISBN 978-960-337-121-2

A standard linear barcode representing the ISBN numbers provided above.

(01) 000000 0 24 0595 7