

普通高等教育教材

Specialized Maritime English

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人民交通出版社股份有限公司

北京

前 言

2014年11月,联合国国际海事组织(IMO)第94届海上安全理事会(MSC)通过了由国际海事教师协会(IMLA)修订的示范课程3.17海事英语。部分参编人员参与了向IMO提交提案、海事英语示范课程修改以及IMO相关会议的全过程。本教材根据IMO海事英语示范课程的相关内容和要求,结合十余年海事英语教学实践编写。

本教材内容包括:海图和出版物、气象信息、船舶类型和结构、IMO国际公约和港口国检查、航海仪器、船舶通信I、船舶通信II、船舶货物管理、航海日志和船舶信函、船员跨文化交流10个单元;每个单元都配备阅读、听力、写作和口语练习。编写力求图文结合、形式新颖、针对性强,具有良好的专业性和实用性。

本教材既可作为海事院校航海技术专业教材和海员语言培训教材,也可作为航海专业技术人员的参考书。

本教材由上海海事大学谢洁瑛策划并主编,于海燕和秦庭荣任副主编,并由金永兴审定。谢洁瑛负责第一、第二、第五和第八单元的编写,于海燕负责第九和第十单元的编写,秦庭荣负责第四单元的编写;参与编写的人员还有:孙洋、李毓敏、龚慧佳。本教材的编写得到了金永兴教授的支持与指导,特此向其表示衷心感谢。

在本教材的编写过程中,我们参考了许多著作和网上的相关信息,对这些作者,也一并表示衷心感谢。

需要本教材视听教学资料的,请通过电子邮件与出版社联系。电子邮件地址:shuiyun@ccpress.com.cn。

限于我们的知识和水平,难免存在不足之处,欢迎读者批评指正。

作 者
2023年7月

Preface

In November 2014, the 94th Maritime Safety Council (MSC) of the United Nations International Maritime Organization (IMO) passed the Model Course 3.17 Maritime English, which was revised by the International Maritime Lecturers Association (IMLA). Some of the editors participated in the whole process of submitting proposals to IMO, revising the Maritime English Model Course and attending the IMO meetings. This textbook is compiled according to the relevant content and requirements of the IMO Maritime English Model Course, combined with more than ten years of Maritime English teaching practice.

The content of this textbook includes 10 units: nautical charts and publications, meteorological information, ship types and structures, IMO conventions and port state inspections, nautical instruments, ship communications I, ship communications II, ship cargo management, voyage records and ship's correspondence, and cross-language and cultural crew communication. Each unit has reading, listening, and writing exercises. The compilation of this textbook strives to combine both pictures and texts in a novel form. This textbook is targeted, and has good professionalism and practicality.

This textbook can be used not only as a teaching book for marine technology majors in maritime institutions and as a teaching material for seafarers' language training, but also as a reference book for professional maritime technicians.

This textbook was planned and edited by Xie Jieying from Shanghai Maritime University, Yu Haiyan, and Qin Tingrong served as deputy editors, and was reviewed and approved, by Prof. Jin Yongxing. Xie Jieying is responsible for the preparation of Units 1, 2, 5 and 8, Yu Haiyan is responsible for Units 9 and 10, Qin Tingrong is responsible for Unit 4. The staff involved in the preparation include Sun Yang, Li Yumin, and Gong Huijia. The preparation of this textbook has received support and guidance from Professor Jin Yongxing, to whom I would

like to express my heartfelt thanks.

For the audible and video teaching materials of the book, please contact the publisher by email. Email address: shuiyun@ccpress.com.cn.

Due to our limited knowledge and level, defects and mistakes are unavoidable. Readers are welcome to criticize and correct.

Editor
July 2023

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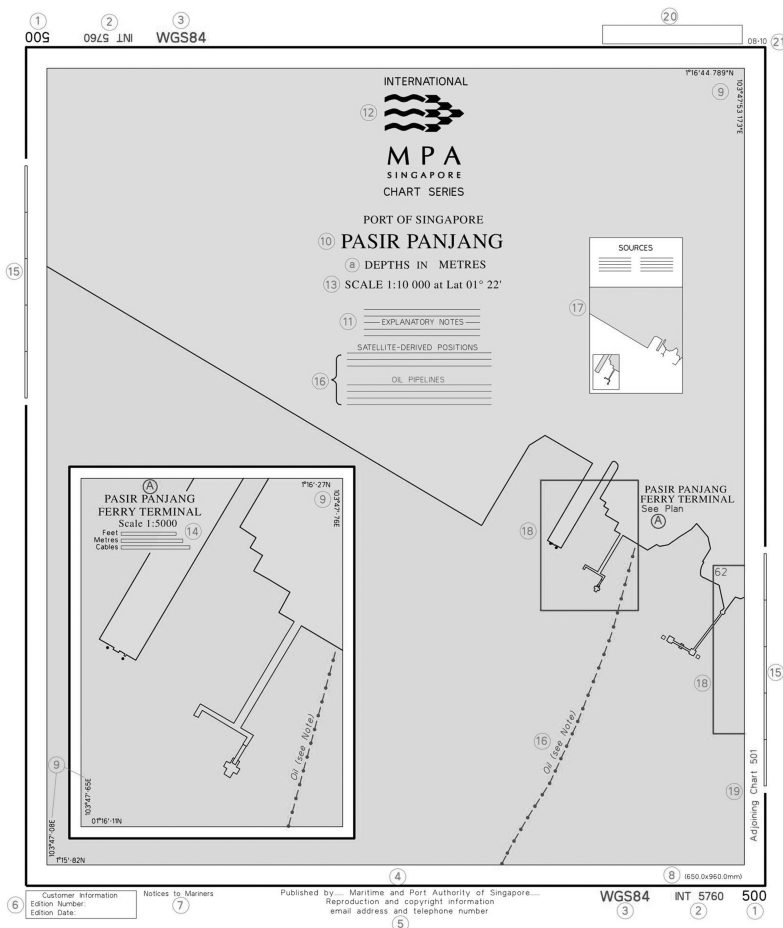
Unit 1 Charts and Publications

Even the best chart is of little value if the mariner is not thoroughly familiar with the various conventions and symbols used in its complication.

By Nautical Chart User's Manual

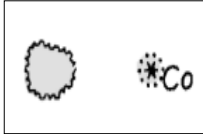
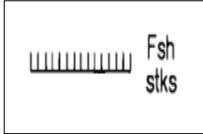




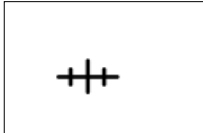
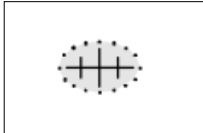

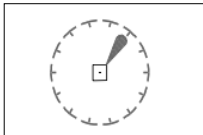


Vocabulary

A. Look at the following pictures. Give the correct number to the following descriptions.



1. _____ Chart number in the Singapore series
2. _____ Chart number in the International (INT) Chart Series
3. _____ Use of WGS84 geodetic reference system
4. _____ Date of Publication
5. _____ Reproduction and Copyright acknowledgment
6. _____ Customer information, Edition number. Edition Date
7. _____ Notice to Mariners the year dates and number of NMs
8. _____ Dimensions of the inner neat-line of the chart border
9. _____ Chart title
10. _____ Explanatory notes on chart content
11. _____ Scale of chart
12. _____ Cautionary notes
13. _____ Source Diagram
14. _____ Corner Coordinator
15. _____ Reference to a larger scale chart or plan
16. _____ Reference to an adjoin chart or similar scale
17. _____ Printing date
18. _____ Reference to the units used for depth measurement

B. Use the terms below to name the symbols on the left.

		<p>1.Limit of safety zone around offshore installation</p>
		<p>2.Precautionary area</p> <p>3.Fishing stakes</p> <p>4.Wreck, least depth unknown, which is considered dangerous to surface navigation</p>
		<p>5.Wreck, in over 200m or depth unknown, which is considered not dangerous to surface navigation</p>
		<p>6.Sounding of doubtful depth</p> <p>7.Existence doubtful</p>
		<p>8.Wreck showing any part of hull or superstructure at the level of Chart Datum</p>
		<p>9.Anchorage</p> <p>10.Wreck over which the depth has been obtained by sounding</p>
		<p>11.Coral reef, detached</p> <p>12.Reporting point</p>

C. Find the correct areas in the following charts.

1. Traffic Separation Zone
2. Separation Lane
3. Traffic Lane Direction
4. Inshore Traffic zone



Readings 1

Purpose of the Nautical Charts

In brief, the principal purpose of the nautical chart is to provide information necessary to promote safe and efficient marine navigation. The time-honored application of a chart is to provide data that can be used by the navigator to fix the vessels position, for example, by taking visual bearings on charted natural and artificial features or ATONs. The fix might be used directly, or as a check on the vessels position determined by other means, such as an electronic fix read from a Loran-C or GPS receiver.

As important as nautical charts are for position fixing, the real utility of a chart

lies elsewhere-in orienting the mariner. A position fix merely answers the question, “Where am I?” But often a much more relevant question is, “What does it mean to be here?” From an decision theoretic perspective, “here” should not be described by the conventional coordinates of latitude and longitude, but rather in terms of the relevant features of the surroundings and their implications for underway decision making.

Charts help answer numerous key questions. Is “here” in the vicinity of rocks, shoals, ledges, reefs, tide rips, sunken wrecks, or other potential hazards to navigation that should be avoided? Is “here” in the vicinity of a danger area, prohibited area, traffic separation scheme (TSS), or other regulated area? Is “here” near a planned turn point, waypoint, or destination? Is “here” a place that I can anchor safely, and if so, which anchor should I use to maximize holding power? Is “here” along my intended route, or should I make course adjustments to get back on track? And if “here” is on the desired track, am I on/ ahead/behind schedule?

If, as a result of some unforeseen contingency (e. g. , medical emergency, mechanical problem, fuel shortage), I needed to select an alternate destination, how could I reach this alternate efficiently? In short, nautical charts furnish information critical to enroute decision making.

Nautical charts also provide information essential to voyage planning; figuring out how to get from “here” to “there” safely and expeditiously. Nautical charts are useful for voyage planning for many reasons; to cite just a few, these charts:

1. enable the identification of safe routes which are efficient in terms of total distance, but avoid known hazards,
2. facilitate the determination of the true/ magnetic courses and distances for each leg of the route (all key inputs to determining the estimated time enroute, estimated time of arrival, and fuel requirements),
3. provide information on landmarks, ATONs, and other features that can be

used to fix the vessel's position and track progress of the voyage,

4. identify regulated areas and, in some cases, the specific regulations applicable to each area, and

5. contain key information on facilities, such as repair services, fuel availability, piers, wharves, and marinas.

A. Read the text above and answer the following questions.

1. What is the principal purpose of nautical charts?

2. Besides position fix, what else do the nautical charts do?

3. What kind of information could be provided by nautical charts for enroute decision-making?

4. What does the safe route mean?

B. Read the text, discuss with your classmates, and find out more useful information that the nautical charts could provide to navigators.

Readings 2

Out-of-Date Charts Lead to Accidents

The London P&I Club has released a bulletin warning of the danger of navigating with incorrect and out-of-date charts, citing this issue as a contributing factor in a number of claim cases—a situation that could be vastly improved through the use of navigational technologies.

The London P&I Club's latest Stop-Loss Bulletin contains a warning about the possible consequences of sailing with navigational charts not containing the latest updates and corrections, noting that it has seen a number of cases arise

from the use of older, incorrect data. The Bulletin says: “The International Convention for Safety of Life at Sea (SOLAS) requires that, All ships should carry adequate and up-to-date charts, sailing directions, lists of lights, notices to mariners, tide tables, and all other nautical publications necessary for the intended voyage. Yet, from time to time, the Club receives a report from a ship inspector that the charts or other nautical publications on an entered ship are out of date. Two incidents reviewed recently by the Club emphasize why compliance with the requirement is imperative. ”

In the first case, a telecommunications company alleged that a submarine cable had been damaged by a ship’s anchor. The first assumption was that, if the anchor had contacted the cable, then it must have been because it was dragging and the ship had not been able to recover the anchor in due time. However, the Club-appointed surveyor quickly established that the ship had, in fact, anchored directly over the cable but that the bridge team had been completely unaware of the hazard beneath them. The surveyor identified that the ship had used an old edition of the chart, which predated the laying of the cable.

Apparently, on preparing the passage plan, the second officer had not checked that he had the current edition of the chart. In the second case, the investigation into the circumstances in which a ship suffered damage as it struck a hazardous wreck confirmed that the current edition of the chart was in use but that it had not been properly corrected. A chart correction showing the wreck had been issued some three years previously.

The Bulletin also recounts some of its inspectors’ experiences in reviewing passage plans created by onboard navigational teams, observing that its ship inspector program occasionally identifies a passage plan that is little more than a list of waypoints entered into the ship’s GPS. It continues with an example of what I describe as inadequate passage planning: A bulk carrier grounded heavily as it slowed to pick up a pilot while inward-bound to a discharge port. The ship was set off course by a strong cross-tide and struck a shoal that was clearly marked on the chart.

Professional salvors refloated the ship but the grounding had caused it significant damage. The investigation into the many causative factors highlighted that the effect of tides and tidal streams was completely absent from the entire passage plan, which is contrary to the requirements of Chapter V of SOLAS. That the ship would be set across the track should have been clear from the information provided in the tidal table printed on the chart. But the failure to allow for the set was even more surprising given that the ship had been at anchor for several days and had to reposition after the strong tides caused the anchor to drag.

Solutions

Issues like the ones raised by the London P&I Club would seem to act as a strong endorsement of industry moves towards increased integration and connectivity in onboard navigation systems. IMO's push for e-Navigation and the introduction of a mandatory carriage requirement for ECDIS (electronic chart display and information system) from 2012 could help to reduce the possibility of vessels sailing with charts that do not represent the most accurate and up-to-date representation of their navigational environment.

The transmission of digital chart data, whether by satellite or using other broadcast systems, is quite obviously the fastest way of getting the latest corrections onto a vessel bridge. Satellite connectivity can allow a vessel, in the deepest parts of the ocean and far from land, to be updated with the most accurate charts available almost instantaneously.

In addition to this, onboard ECDIS systems dealing with digital data could also create the benefit of removing the burden of updating the onboard chart folio from the navigator, giving him more time to concentrate on the task at hand—ensuring safe passage for the vessel.

One recent example of how this technology could be applied is a new ECDIS system released just weeks ago by Swedish company Adveto, which comes with a built-in connection to communicate directly over the internet. Using this kind of technology with an ECDIS could help to remove the specter of out-of-date

charts almost completely, with the system able to automatically connect with ENC (electronic navigational chart) databases onshore at the commencement of the voyage to get the latest chart editions.

Updates could be constantly transmitted as they are produced, and applied automatically without the navigator having to intervene.

IMO's vision of e-Navigation is to integrate existing and new navigational tools in particular electronic tools, in an all-embracing system that will contribute to enhanced navigational safety (with all the positive repercussions this will have on maritime safety overall and environmental protection) while simultaneously reducing the burden on the navigator. The ECDIS is sure to play a central role in the evolution of this strategy, and will hopefully live up to the claims that it will positively reduce the number of accidents and incidents in the shipping industry.



A. Read the article above about chart corrections and find words and expressions in the text that mean the following.

1. Often referred to as Pilots and designed to provide essential information on all aspects of navigation for seafarers. _____

2. Publications detail the times and heights of high and low waters for ports.

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3. Publications advise mariners of important matters affecting navigational safety, including new hydrographic information, changes in channels and aids to navigation, and other important data. _____
4. Series of books provides extensive information on all lighthouses, lightships, lit floating, etc. _____
5. No longer valid. _____
6. A device dropped by a chain or cable to the bottom of water to prevent the motion of a vessel. _____
7. Resistance to the movement of a hull through the water. _____
8. at the appropriate time. _____
9. A complete description of a vessel's voyage from start to finish.

10. The ruin or destruction of a vessel in the course of navigation.

11. A reference point in physical space used for purposes of navigation.

12. A space-based navigation system that provides location and time information in all weather conditions. _____
13. Rise and fall of sea levels caused by the combined effects of gravitational forces exerted by the Moon, Sun, and rotation of the Earth. _____

B. Did you ever read any nautical publications? List other nautical publications not mentioned in the text and describe their major functions and contents.

Name of nautical publication	Major functions and contents

C. Did you ever use the ECDIS? Discuss with your classmates about advantages and disadvantages of ECDIS.

Tips

Correcting the Chart

1. Decide if the notice is applicable to your chart, your vessel, and your sailing area.

2. Apply the correction. If replacing a symbol, find the old symbol on the chart, then, as close as possible and not over any other information, draw the new symbol (Check Chart 5011). Link the new symbol to the required position with a curved line. Finally draw 2 diagonal lines through the old symbol to show that it no longer applies.

If inserting a new symbol, draw it on the exact position given in the NM. If there is no room follow the process above for a 'replacement symbol'.

Detailed instructions and examples of chart corrections are in the UKHO publication NP294 'How To Correct Your Charts The Admiralty Way.'

3. Document the corrections applied. Check your work and make a note of the

Notice to Mariner Number and Year in the bottom left hand corner of the chart, so any reader knows the last correction applied. If you decide that a correction does not apply to your vessel, making a note of the correction number on the chart will save re-checking at a later date.

Listening and Speaking

Listening Clip 1

A. Listen to the recording and answer the fill-in steps for correcting the chart.

1. All the black lines on the edge of block _____.
2. Take the block, cut it out, making sure to keep it close to_____.
3. Place the block onto the chart, and _____.
4. Now with a 0.5 pen write the NM number _____, in case of the block _____.
5. _____ to the block, rubber over with _____ and use the tool to make sure the _____.
6. _____ with your eraser, so you can remove the block from your sheet easily.
7. _____ and carefully place it onto the chart, make sure you are _____.
8. Rubber over the block again with a tool to _____. Rubber over with your eraser to take off any glue _____.
9. _____ that the final steps doing any update are to_____ is correct, and no information has been missed by _____ back to the chart, and finally _____ the NM.

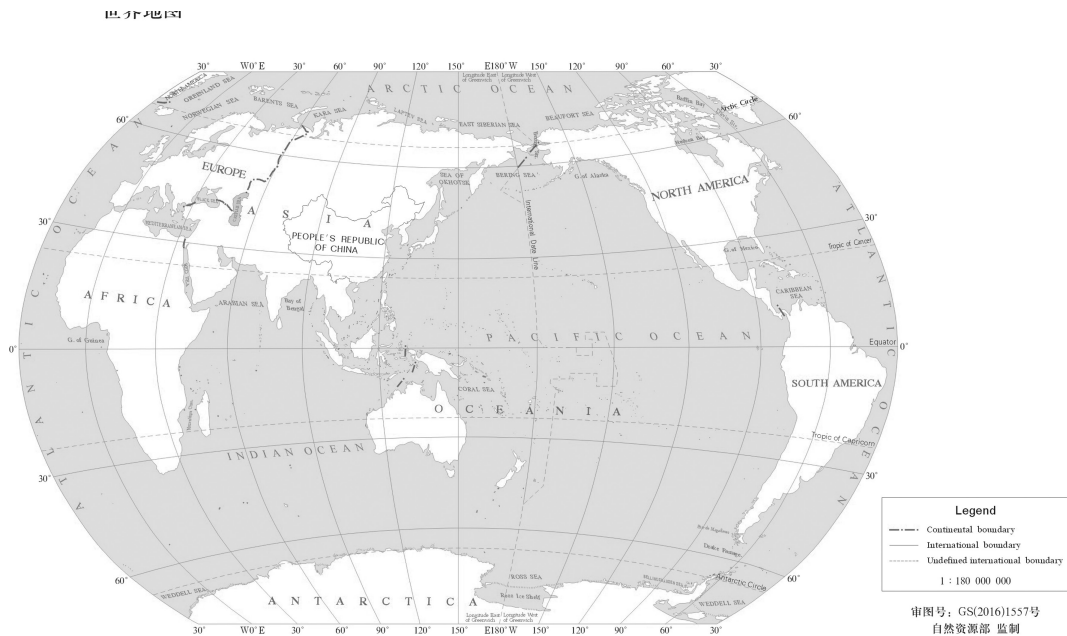
Listening Clip 2

A. Listen to the recording and write down the words that relate to Charts and navigation.

1. _____ 2. _____

3. _____ 4. _____

5. _____ 6. _____



B. Listen to the recording again and answer the following questions.

1. When did the regulation for mandatory carriage of ECDIS come into force?
2. How many ECDIS systems do you have to carry onboard the ship according to the Convention?

3. What do the Admiralty paper chart users rely on to operate safely?
4. What is the additional commitment for the AVCS to check all the information?
5. What is the Admiralty Information Overlay used for?
6. How can you purchase the charts when you have AVCS onboard ship?

Speaking

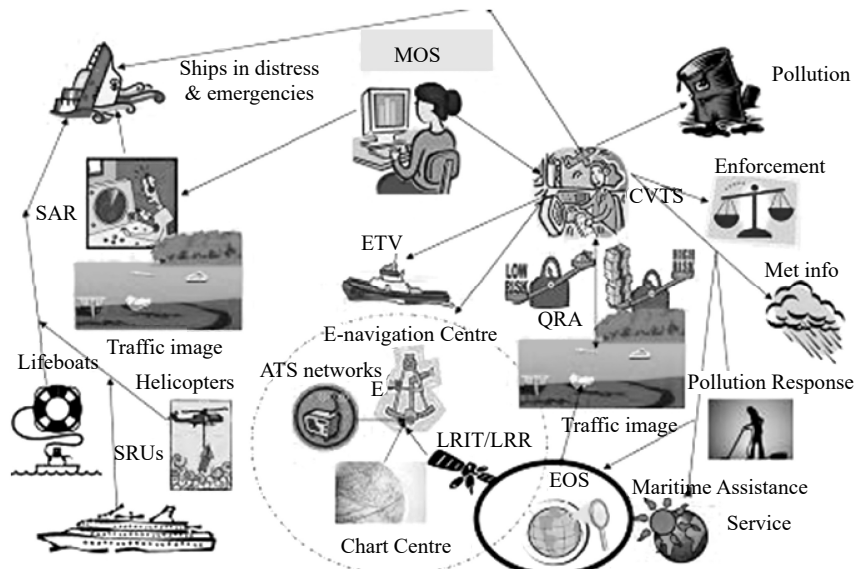
A. Use the words and terminologies you learned, and discuss the future of ECDIS and paper charts with your classmates.

B. Select one nautical publication and describe how to use it and keep it updated.



Writing

A. Considering the terms you learned and your own knowledge about navigation in the reading and listening part, write down your own definition of e-navigation and describe the advantages and disadvantages of it.



B. Use your knowledge of Nautical Publications, make your own list of publications that you should carry as well as the methods and tools to update them.



Unit 2 Meteorological Information

For just one time I would take the Northwest passage, to find the hand of Franklin reaching for the Beaufort Sea, tracing one warm line through a land so wide and savage, and make a Northwest passage to the sea.

By Stan Rogers

Vocabulary

A. Look at the following weather map symbols. Match the word with the following pictures.

High-pressure system
Cold front
Fog
Wind barb
Snow

Low-pressure system
Warm front
Hurricane
Rain

H

≡



a)



L

b)



c)

d)

B. Work with a partner.

Student A: Describe the weather a and b in English with your partner.

Student B: Describe the weather c and d in English with your partner.

For Other Terms

BACK	Backing	RPDY	Rapidly
BECMG	Becoming	FLW	Following
BLDN	Building	FM	From
C-FRONT	Cold Front	FRQ	Frequent
DECR	Decreasing	HPA	Hectopascal
DPN	Deepening	HVY	Heavy
EXP	Expected	IMPR	Improving/Improve
FCST	Forecast	INCR	Increasing
MOD	Moderate	FLN	Filling
MOV	Moving/Move	INTSF	Intensifying/Intensify
NC	No change	ISOL	Isolated
NM	Nautical miles	KMH	km/h
NOSIG	No significant change	KT	Knots
NXT	Next	LAT/LONG	Latitude/Longitude
OCNL	Occasionally	LOC	Locally
O-FRONT	Occlusion Front	M	Meters
POSS	Possible	MET	Meteorology
PROB	Probability/Probable	QCKY	Quickly
QUAD	Quadrant	QSTNR	Quasi-Stationary
SCT	Scattered	SEV	Severe
SLGT	Slight	SHWRS	Showers
SLWY	Slowly	SIG	Significant
STRG	Strong	STNR	Stationary
TEMPO	Temporarily/ Temporary	VEER	Veering
TEND	Further outlooks	VIS	Visibility
VRB	Variable	W-FRONT	Warm Front

For Wind Direction

N	North/Northerly
NE	Northeast/Northeasterly
E	East/Easterly
SE	Southeast/Southeasterly
S	South/Southerly
SW	Southwest/Southwesterly
W	West/Westerly
NW	Northwest/Northwesterly

C. Study the abbreviations above and understand the following weather forecast.

1. GALE WARNING. LOW 60N147W 1001 MB MOVING NW 05 KT. WITHIN 240 NM E QUADRANT WINDS 25 TO 35 KT. SEAS TO 10 FT. ELSEWHERE WITHIN 420 NM SW QUADRANT WINDS 20 TO 30 KT. SEAS TO 8 FT.

1) 24 HOUR FORECAST LOW INLAND 61N149W 1005 MB. CONDITIONS DIMINISHED.

2) 48 HOUR FORECAST LOW DISSIPATED. DENSE FOG. VSBY OCCASIONALLY LESS THAN 1 NM WITHIN 420 NM.

2. SYNOPSIS. . . A WEAK STATIONARY FRONT EXTENDING FROM 31N72W TO JUST E OF WEST PALM BEACH WILL DISSIPATE TONIGHT. A WEAK FRONTAL TROUGH WILL MOVE ACROSS THE NW PORTION WED NIGHT THROUGH FRI. A RIDGE FROM 25N65W TO THE STRAITS OF FLORIDA WILL CHANGE LITTLE THROUGH THU. . . THEN SHIFT N TO NEAR 27N THU NIGHT THROUGH FRI NIGHT.

3. GULF OF MAINE TO THE HAGUE LINE.

1) TODAY. . . N WINDS 10 TO 20 KT. . . DIMINISHING TO 5 TO 15 KT

EARLY. SEAS 4 TO 7 FT.

2) TONIGHT. . . S WINDS 10 TO 20 KT. SEAS 3 TO 5 FT.

3) TUE. . . S WINDS 15 TO 25 KT. SEAS 4 TO 7 FT.

4) TUE NIGHT. . . S WINDS 15 TO 25 KT. SEAS 4 TO 7 FT. CHANCE OF RAIN.

5) WED. . . S WINDS 15 TO 25 KT. SEAS 4 TO 6 FT. SCATTERED TSTMS.

6) WED NIGHT. . . VARIABLE WINDS LESS THAN 10 KT. SEAS 3 TO 6 FT.

7) FRI. . . S TO SW WINDS 10 TO 20 KT. SEAS 3 TO 5 FT.

D. Read the text and find the words and phrases in the text above that mean the following.

1. A very strong wind. _____

2. The height of waves. _____

3. A brief summary of weather condition. _____

4. At least 30-50% of the area could be affected by thunderstorms.

5. Decreasing. _____

E. Discuss the sea weather conditions with weather terms according to the following weather chart.

Readings 1

Tropical storms, cyclones, hurricanes and typhoons, although named differently, describe the same disaster type. Essentially, these disaster types refer to a large scale closed circulation system in the atmosphere which combines low pressure and strong winds that rotate counter clockwise in the northern hemisphere and clockwise in the southern hemisphere. The system is referred to as a “cyclone” in the Indian Ocean and South Pacific, “hurricane” in the Western Atlantic and Eastern Pacific and “typhoon” in the Western Pacific.

Hurricanes and typhoons are the same storm types as “tropical cyclones” (the local name for storms which originate in the Caribbean and China Sea region respectively).

A tropical cyclone is a non-frontal storm system that is characterized by a low pressure center, spiral rain bands and strong winds. Usually it originates over tropical or subtropical waters and rotates clockwise in the southern hemisphere and counter-clockwise in the northern hemisphere. The system is fueled by heat released when moist air rises and the water vapor it contains condenses (“warm core” storm system). Therefore the water temperature must be $>27^{\circ}\text{C}$.

Cyclones, hurricanes, and typhoons can be predicted several days in advance. The onset is extensive and often very destructive. These disasters are usually more destructive than floods.

First, in a sudden, brief onslaught, high winds cause major damage to infrastructure and housing, in particular fragile constructions. They are generally followed by heavy rains and floods and, in flat coastal areas, by tidal waves.

In the case of cyclones, accurate landfall predictions can give only a few hours’ notice to threatened populations. In addition, people generally opt to wait until the very last minute before abandoning their home and possessions. Deaths from drowning in the high tides and sudden flooding and material losses are therefore often very high.

A. Read the text and answer the following True or False questions.

1. What are the common features of tropical storms, cyclones, hurricanes and typhoons?
2. What are the differences between tropical storms, cyclones, hurricanes and typhoons?
3. What are the weather conditions following the typhoons and what about the risks of typhoon-affected area?

Tips

What's the difference between tropical cyclone and cyclone?

A tropical cyclone is a generic term used by meteorologists to describe a rotating, organized system of clouds and thunderstorms that originates over tropical or subtropical waters and has closed, low-level circulation. Once a tropical cyclone reaches maximum sustained winds of 74 miles per hour or higher, it is then classified as a hurricane, typhoon, or cyclone depending upon where the storm originates in the world.

Readings 2

How are Winds Reported at Sea Nowadays?

For weather forecasting purposes, meteorologists use wind data averaged over 10 minutes, and professional observers are trained to take such averages. This is built into the automatic systems increasingly coming into use. Waves result from the average wind at the time. (Swell is caused by winds that have now died away or from winds occurring some distance away.) The wind deduced from the sea state is the nearest practical equivalent to the 10-minute representative measurement made at land stations.

Since 1855, ship officers have reported the weather on behalf of Meteorological Services. Nowadays, some 7000 merchant ships transmit their reports in real-

time to provide valuable and otherwise unobtainable data for use by weather forecasters. Most of the wind reports from these ships are still made by visual observations of the sea state and, no doubt, partly on the behavior of the vessel. Even a large tanker will have a motion that depends upon the wind, or more correctly, the sea generated by that wind.

A few ships do use anemometers but these, surprisingly at first sight, do not give such good observations as the visual estimates. The officer of the watch on the bridge is likely to take a snapshot look at a wind indicator, be influenced by the gust speeds, and tend to report exaggerated wind speeds. That is unless he has some form of averaging device. Allowance has to be made for the speed and direction of the ship and there are great difficulties in positioning anemometers on ships so that the measurements are not affected by the superstructure.

Visual observations by seamen of wind have been remarkably consistent over the past 140 years and form the basis of the climatology of the oceans. The Meteorological Office, through the exchange of data agreements with other Met Services now has a computer-based archive of nearly 80 million ship weather reports over all the world's oceans and seas.

Beaufort Wind Scale

Force	Wind (Knots)	WMO Classification	Appearance of Wind Effects	
			On the Water	On Land
0	Less than 1	Calm	Sea surface smooth and mirror-like	Calm, smoke rises vertically
1	1-3	Light Air	Scaly ripples, no foam crests	Smoke drift indicates wind direction, still wind vanes
2	4-6	Light Breeze	Small wavelets, crests glassy, no breaking	Wind felt on face, leaves rustle, vanes begin to move

Continued Table

Force	Wind (Knots)	WMO Classification	Appearance of Wind Effects	
			On the Water	On Land
3	7-10	Gentle Breeze	Large wavelets, crests begin to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended
4	11-16	Moderate Breeze	Small waves 1-4 ft. becoming longer, numerous whitecaps	Dust, leaves, and loose paper lifted, small tree branches move
5	17-21	Fresh Breeze	Moderate waves 4-8 ft taking longer form, many whitecaps, some spray	Small trees in leaf begin to sway
6	22-27	Strong Breeze	Larger waves 8-13 ft, whitecaps common, more spray	Larger tree branches moving, whistling in wires
7	28-33	Near Gale	Sea heaps up, waves 13-19 ft, white foam streaks off breakers	Whole trees moving, resistance felt walking against wind
8	34-40	Gale	Moderately high (18-25 ft) waves of greater length, edges of crests begin to break into spindrift, foam blown in streaks	Twigs breaking off trees, generally impedes progress
9	41-47	Strong Gale	High waves (23-32 ft), sea begins to roll, dense streaks of foam, spray may reduce visibility	Slight structural damage occurs, slate blows off roofs
10	48-55	Storm	Very high waves (29-41 ft) with overhanging crests, sea white with densely blown foam, heavy rolling, lowered visibility	Seldom experienced on land, trees broken or uprooted, "considerable structural damage"

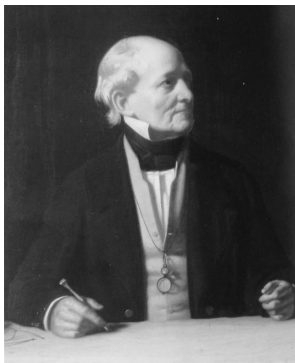
Continued Table

Force	Wind (Knots)	WMO Classification	Appearance of Wind Effects	
			On the Water	On Land
11	56-63	Violent Storm	Exceptionally high (37-52 ft) waves, foam patches cover sea, visibility more reduced	
12	64+	Hurricane	Air filled with foam, waves over 45 ft, sea completely white with driving spray, visibility greatly reduced	

Tips***Commander Beaufort***

Beaufort was the creator of the Beaufort Scale for indicating wind force.

During these early years of command, Beaufort developed the first versions of his Wind Force Scale and Weather Notation coding, which he was to use in his journals for the remainder of his life. In 1829, at age 55 (retirement age for most administrative contemporaries), Beaufort was appointed as the British Admiralty Hydrographer of the Navy. He served in that post for 25 years. Beaufort converted what had been a minor chart repository into the finest surveying and charting institution in the world. Some of the excellent charts the Office produced are still in use today.

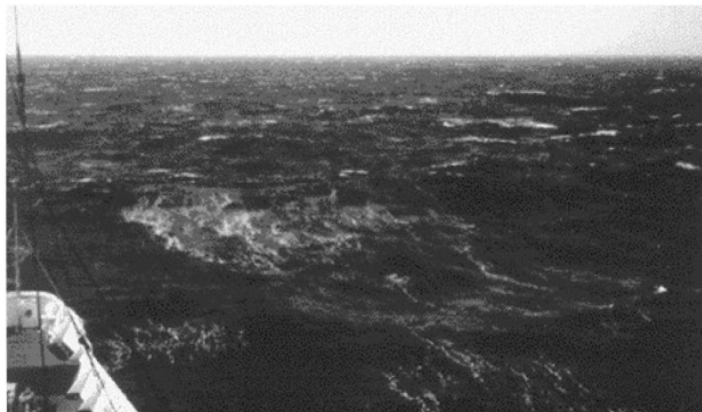


A. Read the text and answer the following questions.

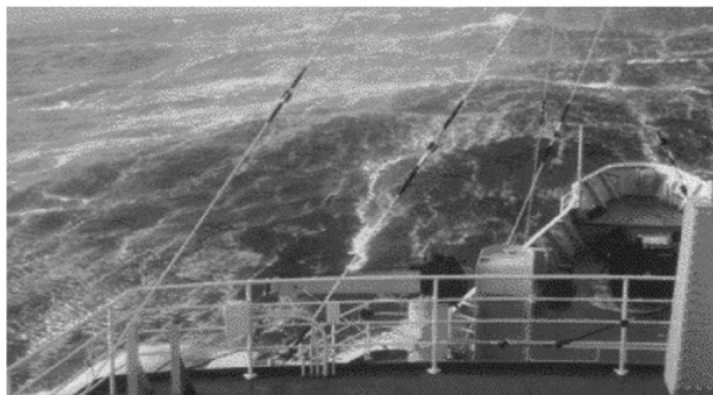
1. What is the most popular way to make wind report for seafarers?
2. What does the motion of the vessel mean?
3. Why the measurements of wind are not affected by the superstructure of the vessel?

B. Match the following pictures with the description of wind forces above.

1. _____



2. _____



3. _____



C. Do you have any experiences about wind observation at sea? Discuss with your classmate about how to observe force and direction of wind at sea.

Listening and Speaking

Listening Clip 1

A. You are going to listen to a shipping forecast and fill in the blanks.

Instruction

The shipping forecast is issued four times a day at 2300, 0500, 1100, 1700 UTC and covers a period of 24 hours from 0000, 0600, 1200 and 1800 UTC respectively. The waters around the British Isles are divided into 31 sea areas shown on the map.

The forecast contains details of gale warnings in force, a general synopsis and sea-area forecasts containing forecast wind direction and force, weather and visibility.

Part 1

1. Another shipping forecast issue by MET office at 2343 Saturday 18th

2. There are warnings of _____ in all areas except Trafalgar

3. _____ at 1800 low 200 miles south of Ireland 960 _____ slowly eastern and _____

4. Low 250 NE of Faeroes 956 moving _____ North and _____ 940 by 1800 Sunday

5. High Trafalgar _____ slow moving with little change

Part 2

The area forecast for next 24 hrs

Viking, N and S Utsire and Forties

1. SWly veering NWly 6 to gale 8 perhaps will gale 9 later

2. Rain then _____, moderate or poor _____

Cromarty, Forth, Tyne, Dogger

3. SWly _____ Wly 5-7 _____ gale 8 rain and showers, moderate or good

Fisher

4. SWly _____ Wly 6 to 7 to gale 8 perhaps _____ 9, rain and wintering showers, poor becoming good

German Bight, Humber

5. SWly _____ Wly 7 to severe gale 9 _____ 6 in Humber later, rain and showers, moderate or poor, becoming good

Thames, Dover, Wight, Portland, Plymouth

6. SWly 6 to gale 8 occasionally severe gale 9 _____ Wly 4 or 5 later

7. Rain at times, moderate or poor, becoming good

Biscay

8. SWly 6 to gale 8 occasional rain, moderate or poor

Trafalgar

9. In North, SWly 4 or 5, _____3 or 4, but mainly Nly in SE _____in North _____, moderate or good

Speaking

Did you have any experiences about typhoon or other severe weather conditions. Describe it and explain what you saw with your desk mate and report to your instructor.

Writing

Play a game with your classmate. Use the words and symbols in the following boxes to write down a shipping forecast. Broadcast the forecast in the classroom.

H / ≡	L \ ≡
** *	” ”
••• ≡	” ” ≡
H / ≡	L \ ≡
≡ ** L	≡ ∇
≡	≡ H
••• ≡	** ”
H / ≡	L ≡
	≡

Unit 3 Type and Structure of Ships

Without ships, one half of the world will starve and the other half will freeze.

*By Efthimios Mitropoulos,
The former Secretary-General of IMO*

Vocabulary

A. Look at the following pictures. Match the word with the following pictures.

Container ship	Oil tanker	Bulk carrier
General cargo ship	Tug boat	LNG
Passenger ship	Ro-Ro ship	Ice breaker



a)



b)



c)



d)



e)



f)



g)



h)



i)