李昕辉 编著

航海英语阅读

Reading for Nautical English

大连海事大学出版社

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内容提要

本书共分十一章。第一章为航海气象，主要包括气象报告和航海天气现象等内容。第二章为航海图书资料，主要介绍了航海通告和海图改正以及航行警告和其他航海出版物。第三章为航行技术，主要介绍了靠离泊技术、船舶操纵性能、冰区航行技术、航行术语及潮汐等内容。第四章为船舶结构与设备，主要介绍了船体结构以及甲板设备。第五章为货运技术，主要介绍了货物运输技术常用术语、船舶运输能力、理货计量作业，以及船舶结构力学有关船舶稳性和船舶强度的知识。第六章为海上应急反应，主要介绍了海上搜救基本知识，海上消防救生、溢油及海损的应急处理。第七章为航行及通信设备，主要介绍了船舶常用各种仪器设备，包括雷达、磁罗经、陀螺罗经、GPS、VDR、AIS、ECDIS 等仪器以及 GMDSS 等通信设备的简单原理及使用。第八章为国际海上避碰规则，主要包括规则的 Part A 和 Part B 两部分。第九章为船舶修理，主要介绍了船舶坞修以及日常维护保养常识。第十章为航运业务英文写作，主要介绍了航海日志的基础知识、航海日志的填写以及船舶事故报告的有关内容。第十一章为国际海事公约及规则，介绍了 SOLAS、STCW、MARPOL、ISM 及 ILO 等公约及规则的主要内容。

本书既可作为高等航海院校驾驶专业航海英语阅读教材，也可作为无限航区和近洋航区海船船舶二/三副适任证书考试培训用书，对于无限航区和近洋航区海船船舶大副培训也有极高的参考价值。

前　言

“航海英语”是海洋船舶驾驶专业的必修课之一，是船舶驾驶专业适任证书考试的必考科目。STCW 公约马尼拉修正案对海船船员的英语水平提出了更高的要求，于 2012 年 1 月 1 日起正式生效。为了适应 STCW 公约的新要求，我们编写了这本《航海英语阅读》。本教材涵盖了海事局为履行 STCW 新公约而制定的航海英语考试大纲的所有项目。与同类教材相比，本教材在内容上有所突破，充分考虑到大证考试以及远洋船舶一线工作的实际需求，适合航海类高等院校学生使用，亦可作为无限航区和近洋航区海船船舶二/三副培训教材，对于无限航区和近洋航区海船船舶大副的培训也有极高的参考价值。本教材采用了最新素材，充分体现了航海技术的新成果。

全书共分十一章，由青岛远洋船员职业学院教师李昕辉编著。本书在原有教材的基础上做了很大改动，更能够体现航运业对航海英语教学的最新要求，为培养合格远洋船舶驾驶从业人员提供了有效保障。在编写过程中，编者收集了大量最新英文航海资料，并进行了整理，配以较为精准的翻译、注解；借鉴了青岛远洋船员职业学院航海英语教研室高嵩、曾宇涛、孟玉芳、姜泉、李功臣、于华等老师编写的大量资料，重新进行了编撰，使本书成为航海教育界更新较快、比较权威的航海英语阅读教材。全书由李昕辉统稿、定稿。教材编写过程中编者力求做到语言准确、覆盖面广、专业知识详尽、重点突出、条理清楚。教材试用过程中，青岛远洋船员职业学院航海英语教研室全体教师为本书提供了很好的意见和建议，可以说是教研室全体教师辛勤工作的成果。教材编写过程中还得到了青岛远洋船员职业学院领导、外语系领导和老教师王平洲的大力支持，在此一并表示感谢。

虽然在本书编写过程中编者力求做到准确无误，但由于水平有限以及其他客观条件的限制，书中难免还存在一些不妥之处，希望同行专家、读者给予批评指正。

编著者

2014 年 12 月 15 日

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Chapter 1

Marine Meteorology

In this chapter we will study:

- Weather Reports
  - Terms Related to Weather Reports
  - Radio Weather Messages
- Marine Weather
  - Tropical Cyclones
  - Prevailing Winds and Fogs
  - Clouds

Part One
Weather Reports

Introduction

It is well known that ships are closely and inseparably related with the weather. Weather observation has developed in parallel with navigation, and weather forecasting was started for the sake of safety of ships.

The prediction of weather at some future time is based upon an understanding of weather processes, and observations of present conditions. Thus, when there is a certain sequence of cloud types, rain usually can be expected to follow. If the sky is cloudless, more heat will be received from the sun by day, and more heat will be radiated outward from the warm earth by night than if the sky is overcast. If the wind is from a direction that transports warm, moist air over a colder surface, fog can be expected. A falling barometer indicates the approach of a "low", probably accompanied by stormy weather. Thus, before meteorology passed from an "art" to "science", many individuals learned to interpret certain atmospheric phenomena in terms of future weather, and to make reasonably accurate forecasts for short periods into the future.

With the establishment of weather observation stations, continuous and accurate weather information became available. As observations expanded and communication techniques improved, knowledge of simultaneous conditions over wider areas became available. This made possible the collection of "synoptic" reports at civilian and military forecast centers.

Forecasts are issued for various areas. The national meteorological services of most maritime nations, including the United States, issue forecasts for ocean areas and warnings of approaching storms. The efforts of the various nations are coordinated through the World Meteorological Organization.

Vocabulary

meteorology [ˌmiːtɪəˈrɒlədʒɪ]	*n.*	气象学
prediction [prɪˈdɪkʃən]	*n.*	预测
radiate [ˈreɪdɪeɪt]	*vt.*	放射,辐射
overcast [ˈəʊvəkɑːst]	*adj.*	阴天的
moist [mɔɪst]	*adj.*	潮湿的
barometer [bəˈrɒmɪtə]	*n.*	气压计
interpret [ɪnˈtɜːprɪt]	*vt.*	解释,理解
atmospheric [ˌætməsˈferɪk]	*adj.*	大气的
phenomenon [fɪˈnɒmɪnən]	*n.*	(*pl.* phenomena) 现象
in terms of		以……术语(措辞)表达
simultaneous [ˌsɪməlˈteɪnjəs]	*adj.*	同时的,同时发生的
synoptic [sɪˈnɒptɪk]	*adj.*	天气的
synoptic chart		天气(分析)图
meteorological [ˌmiːtjərəˈlɒdʒɪkəl]	*adj.*	气象的
meteorological service		气象服务中心
maritime [ˈmærɪtaɪm]	*adj.*	海事的,海运的
coordinate [kəʊˈɔːdɪnɪt]	*vt.*	使协调
World Meteorological Organization (WMO)		世界气象组织

Notes

1. This made possible the collection of "synoptic" reports at civilian and military forecast centers.
   这使得民用和军用气象预报中心的气象报告收集成为可能。

Passage One

Terms Related to Weather Reports

In studying weather reports, it is of first importance to have a better understanding of the following terms commonly used in marine meteorology.

Backing—A change in the direction of the wind, in an anti-clockwise direction.

Veering—A change in the direction of the wind, in a clockwise direction.

Front—The line of separation at the earth's surface between cold and warm air masses.

Cold front—The boundary line between the advancing cold air at the rear of a depression and the warm air.

Warm front—A warm front is a leading edge of an advancing mass of warm air. It separates warm air from the colder air ahead. A cloud sequence of cirrus, cirrostratus, and altostratus clouds followed by rain usually signifies the approach of a warm front.

Pressure system—Pressure system includes depressions, anticyclones, fronts, ridge, trough, shear line, etc.

Pressure gradient—Lines drawn through points on the earth having the same atmospheric pressure are known as isobars. These lines of equal pressure enclose areas of either high or low pressure. A pressure gradient is the space found between isobars. Pressure gradient indicates an increase or decrease in atmospheric pressure per unit distance between isobars. Isobars are spaced closer in the eastern portion of the high-pressure area than in the western section. When isobars are close, the pressure gradient is said to be strong or steep; when they are far apart, it is called weak. Weather in strong or steep pressure gradients is normally subject to sudden changes with varying wind force and direction. In weak gradient areas, the weather changes are gradual and predictable.

Depressions—Depressions (known for synoptic purpose as lows) usually have two or more fronts extending from their centers, each front representing a belt of bad weather. During its existence a depression has a warm front and a cold front, the area between the two being known as the warm sector. The cold front moves faster than the warm front and gradually overtakes it, causing the warm to be lifted up from the surface. When this happens the depression is said to be occluded, and the fronts have merged into one single front, known as occlusion. Once occluded, the depression becomes less active, slows down and starts to fill.

Anticyclones—The movement of anticyclones (known as highs) is generally slow and irregular (or uncertain). The pressure gradient is usually slight, the wind is light and the weather is often fine or partly cloudy, but winter overcast skies are common, producing gloomy conditions. Precipitation is, however, rare except on the outskirts of an anticyclone.

Synoptic—An adjective derived from the noun "synopsis", a brief statement presenting a general view of something. Thus a synoptic chart shows the weather condition over a large area at a given instant of time.

Typhoon—A name given to the tropical cyclone of the China Sea and the west part of the North Pacific Ocean.

Hurricane—A name given to the tropical cyclone of the West Indian region, also applied to force 12 in the Beaufort scale, whatever its causes.

Cyclone—A name given to the tropical cyclone of the Bay of Bengal and the Arabian Sea. Sometimes it is used as a general term for tropical cyclones of all oceans, or in the form "tropical cyclone". Depressions of the Temperate Zones were formerly often referred to as cyclones, but "depression" or "low" is now used to distinguish them from the tropical

storms. The term "cyclonic depression" is still sometimes used for a depression.

Squall—A storm wind that rises suddenly, lasts for some minutes, and dies away comparatively rapidly. It is frequently, but not necessarily, associated with a temporary change of direction.

Barometer—Barometers are instruments for measuring atmospheric pressure.

Aneroid barometer—The type of barometer used aboard ship is the aneroid. The term "aneroid" means without fluid. Scales are marked in inches and hundredths of inches. Some instruments also have a millibar scale. An aneroid barometer is unaffected by temperature, so readings need not be corrected for changes in temperature.

Vocabulary

backing [ˈbækɪŋ]	*n.*	风的逆时针转向
veering [ˈvɪərɪŋ]	*n.*	风的顺时针转向
front [frʌnt]	*n.*	锋面
air mass		气团
cold front		冷锋
rear [rɪə]	*n.*	后方,后面
warm front		暖锋
cirrus [ˈsɪrəs]	*n.*	卷云
cirrostratus [ˈsɪrəʊˈstreɪtəs]	*n.*	卷层云
altostratus [ˈæltəʊˈstreɪtəs]	*n.*	高层云
pressure [ˈpreʃə(r)]	*n.*	气压
pressure system		气压系统
depression [dɪˈpreʃən]	*n.*	低气压
anticyclone [ˈæntɪˈsaɪkləʊn]	*n.*	反气旋,高气压
ridge [rɪdʒ]	*n.*	高压脊
trough [ˈtrɔːf]	*n.*	低压槽
shear line		切变线
occlude [ɒˈkluːd]	*vi.*	锢囚
occlusion [əˈkluːʒn]	*n.*	锢囚
gradient [ˈgreɪdɪənt]	*n.*	梯度
pressure gradient		气压梯度
isobar [ˈaɪsəʊbɑː]	*n.*	等压线
enclose [ɪnˈkləʊz]	*vt.*	把……围起来
steep [stiːp]	*adj.*	陡峭的
subject [ˈsʌbdʒɪkt]	*adj.*	易受……的
be subject to		易遭受,受……支配,从属于

vary [ˈveərɪ]	*vi.*	改变,变化,不同
merge [mɜːdʒ]	*vt.*	逐渐消失在某物中,合并
fill [fɪl]	*vi.*	(低气压)填塞,低气压升高
gloomy [ˈgluːmɪ]	*adj.*	阴沉的
outskirts [ˈaʊtskɜːts]	*n.*	边缘地带
precipitation [prɪˌsɪpɪˈteɪʃən]	*n.*	(雨或雪等)降水量
cyclone [ˈsaɪkləʊn]	*n.*	气旋
tropical cyclone		热带气旋
typhoon [taɪˈfuːn]	*n.*	台风
hurricane [ˈhʌrɪkən,-kɪn]	*n.*	飓风
Beaufort [ˈbəʊfət]		蒲福
Bay of Bengal		孟加拉湾
Arabian Sea		阿拉伯海
temperate [ˈtempərɪt]	*adj.*	气候温和的,温带的
Temperate Zone		温带
squall [skwɔːl]	*n.*	狂风(常带有风、雨等)
aneroid [ˈænərɒɪd]	*adj.*	无液的
aneroid barometer		无液气压计
millibar [ˈmɪlɪbɑː]	*n.*	(*abbr.* mb) 毫巴

Passage Two

Radio Weather Messages

A complete radio weather message normally includes the following three parts:

Part One: Warnings

1) Gale Warnings: Gale warnings are issued when winds of Beaufort force 8-9 are expected. The term "strong" implies winds of force 9.

2) Storm Warnings: Storm warnings are usually issued when winds of force 10-11 are expected.

3) Hurricane Warnings: Hurricane warnings are issued in some parts of the world when winds of force 12 or above are expected.

The term "imminent" implies within 4 hours of the time of issue; "soon" implies between 4 and 12 hours; "later" implies more than 12 hours.

Part Two: Synopses

An analysis message gives the result of a synoptic analysis in terms of pressure systems (anticyclones or "highs", depressions or "lows", etc.) and fronts and their direction and

speed of movement, as determined by the Weather Center which issues the message.

An analysis message may be transmitted in code. It includes the corrected barometric pressure, barometric tendency and movement of front.

By plotting the analysis messages on weather charts, we are able to prepare a reasonably accurate forecast of the wind and weather. This section of the weather message is variously transmitted under the heading of "General Situation", "Synoptic Situation", "Synopsis", "Summary" or such other similar expressions.

Part Three: Forecasts

These messages give a statement of expected condition in a certain area over a period 12 or 24 hours. They include direction and speed of wind, the weather, temperature, visibility and state of the sky and sea.

Reproduced hereunder are radio weather messages received from some of the major coast radio stations.

(1) **Marine Forecast**

Bulletin issued at 0900 HKT 04/Dec/2009

NO WARNING.

GENERAL SITUATION AT 032100 UTC:

THE NORTHEAST MONSOON PERSISTS OVER THE FORECAST AREAS.

MARINE FORECAST FOR 24 HOURS FROM 040100 UTC:

HONG KONG = E TO NE 4. FINE. TEMP 20-15 C.

KWANGTUNG = NE 5-6. FINE. SEA 2-3 M. SWELL NE 2 M.

TAIWAN STRAIT = NE 6, UP TO 7 AT FIRST. CLD. SEA 3 M, UP TO 4 M AT FIRST. SWELL NE 2-3 M.

BASHI = NE 5-6. CLD. SEA 2-3 M. SWELL NE 3 M.

PRATAS = NE 5-6. CLD. SEA 2-3 M. SWELL NE 2-3 M.

BALINTANG = NE 5-6. CLD. SEA 2-3 M. SWELL NE 3 M.

SCARBOROUGH = NE 6, UP TO 7 AT FIRST. FINE. SEA 3 M, UP TO 4 M AT FIRST. SWELL NE 3 M.

PARACEL = NE 5-6. ISOL SHOWERS. SEA 2-3 M. SWELL NE 2-3 M.

TONKIN = N TO NE 4-5. CLD. SEA UP TO 2 M.

DANANG = N TO NE 4-5. RAIN PATCHES. SEA UP TO 2 M. SWELL NE UP TO 2 M.

(2) **Shipping Forecast**

The Shipping Forecast issued by the Met Office, on behalf of the Maritime and Coastguard Agency, at 0505 UTC on Friday 04 December 2009.

There are warnings of gales in Viking South Utsire Forties Biscay Fitzroy Sole Shannon Rockall Malin Hebrides and Bailey.

The general synopsis at midnight:

Lows Bailey and Dogger 995 filling by midnight tonight. New low expected 200 miles south of Iceland 972 by same time.

The area forecasts for the next 24 hours:

Viking, North Utsire, South Utsire, Forties:

Southeasterly 5 to 7, occasionally gale 8 at first except in North Utsire, but cyclonic 5 in southwest Forties. Rough or very rough. Rain or showers. Moderate or good.

Cromarty, Forth, Tyne:

Northwesterly backing southeasterly 5 to 7, decreasing 4 for a time. Moderate or rough. Rain or showers. Moderate or good.

Dogger:

Cyclonic becoming southeasterly 5 or 6. Moderate or rough. Showers, rain later. Mainly good.

Fisher, German Bight:

South or southeast 5 to 7. Moderate or rough. Rain or showers. Moderate or good.

Humber, Thames, Dover:

Northwesterly backing southerly 5 to 7. Moderate or rough. Rain or squally showers. Mainly good.

Wight, Portland, Plymouth:

Northwest backing south or southwest 4 or 5, increasing 5 to 7. Rough or very rough. Rain then squally showers. Moderate or good, occasionally poor.

Biscay:

West backing southwest 5 to 7, occasionally gale 8 at first. Rough or very rough, occasionally high. Rain or squally showers. Moderate or good, occasionally poor.

(3) **U. S. High Seas Marine Forecast by Area**

HIGH SEAS FORECAST FOR METAREA IV

NWS OCEAN PREDICTION CENTER WASHINGTON DC

1030 UTC SUN DEC 20 2009

SUPERSEDED BY NEXT ISSUANCE IN 6 HOURS

PAN PAN

NORTH ATLANTIC WEATHER NORTH OF 31N TO 67N AND WEST OF 35W

SYNOPSIS VALID 0600 UTC DEC 20.

24 HOUR FORECAST VALID 0600 UTC DEC 21.

48 HOUR FORECAST VALID 0600 UTC DEC 22.

WARNINGS

HURRICANE FORCE WIND WARNING

LOW 39N70W 978 MB MOVING NE 25 KT. WITHIN 180 NM W AND NW SEMICIRCLES WINDS 40 TO 55 KT. SEAS 17 TO 27 FT. ELSEWHERE W OF A LINE FROM 31N49W TO 44N66W WINDS 25 TO 40 KT. SEAS 10 TO 20 FT.

06 HOUR FORECAST LOW 40N68W 975 MB. WITHIN 180 NM S AND SW QUADRANTS WINDS 50 TO 65 KT. SEAS 18 TO 30 FT.

24 HOUR FORECAST LOW 43N59W 967 MB. WITHIN 300 NM S AND 180 NM REMAINDER SW QUADRANTS WINDS 50 TO 65 KT. SEAS 28 TO 38 FT. ELSEWHERE FROM 34N TO 42N BETWEEN 53W AND 64W WINDS 40 TO 50 KT. SEAS 18 TO 30 FT. ALSO FROM 31N TO 48N BETWEEN 47W AND 75W WINDS 25 TO 40 KT. SEAS 11 TO 22 FT.

48 HOUR FORECAST LOW 43N55W 971 MB. WITHIN 720 NM S AND SW QUADRANTS WINDS 35 TO 50 KT. SEAS 25 TO 40 FT. ALSO WITHIN 240 NM S OF A LINE FROM 51N56W TO 50N44W TO 46N36W WINDS 35 TO 45 KT. SEAS 18 TO 28 FT. ELSEWHERE FROM 31N TO 55N BETWEEN 35W AND 74W WINDS 25 TO 40 KT. SEAS 13 TO 26 FT.

GALE WARNING

LOW 46N42W 992 MB MOVING W 20 KT. WITHIN 300 NM N AND NE OF A LINE FROM 51N55W TO 46N35W WINDS 35 TO 45 KT. SEAS 20 TO 32 FT. ELSEWHERE E OF A LINE FROM 31N46W TO 47N60W TO 61N64W WINDS 25 TO 35 KT. SEAS 13 TO 26 FT.

24 HOUR FORECAST LOW DISSIPATED. EXCEPT WHERE NOTED ABOVE WITH LOW 43N59W WITHIN 720 NM S OF A LINE FROM 53N35W TO 61N62W WINDS 25 TO 40 KT. SEAS 13 TO 26 FT. ELSEWHERE FROM 31N TO 47N E OF 47W WINDS TO 25 KT. SEAS 11 TO 18 FT.

48 HOUR FORECAST CONDITIONS ABSORBED BY LOW 43N55W DESCRIBED ABOVE.

SYNOPSIS AND FORECAST

48 HOUR FORECAST N OF 63N W OF 54W N WINDS TO 25 KT. SEAS TO 8 FT. DENSE FOG. VSBY OCCASIONALLY LESS THAN 1 NM FROM 47N TO 60N BETWEEN 44W AND 58W.

24 HOUR FORECAST CONDITIONS IMPROVED.

48 HOUR FORECAST DENSE FOG FROM 44N TO 50N BETWEEN 46W AND 53W. HIGH 62N40W 1038 MB MOVING SE 10 KT.

24 HOUR FORECAST HIGH 59N38W 1028 MB.

48 HOUR FORECAST HIGH DISSIPATED.

FORECASTER KELLS. OCEAN PREDICTION CENTER.

(4) **Perth Local Marine Forecast**

December 6, 2009 1630 WST

Forecast

Sunday: S/SW 20/30 knots tending S/SE 20/30 knots during the evening. Seas to 2.0 m. Swell 1.0 m to 1.5 m. Swell at Cottesloe: to 0.4 m. Monday: SE winds 20/25