

驾驶专业

中华人民共和国海船船员适任考试培训教材

航海英语

(大副)

 中国海事服务中心组织编审

Nautical English

Chief Officer



人民交通出版社

China Communications Press



大连海事大学出版社

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前 言

《中华人民共和国海船船员适任考试和发证规则》(简称 11 规则)已于 2012 年 3 月 1 日起生效,新的《中华人民共和国海船船员适任考试大纲》也将于 2012 年 7 月 1 日开始实施。为了更好地指导帮助船员进行适任考试前的培训,进一步提高船员适任水平,在交通运输部海事局领导下,中国海事服务中心组织全国有丰富教学、培训经验和航海实际经验的专家共同编写了与《中华人民共和国海船船员适任考试大纲》相适应的培训教材。本教材编写依据 STCW 公约马尼拉修正案,采用图文并茂的形式,改变了长期以来以文字为主的教材编写方式。本教材的创新模式对今后的船员适任培训具有重要的指导意义。

本套教材知识点紧扣考试大纲,具有权威、准确、系统、实用的特点,重点突出船员适任考前培训和航海实践需掌握的知识,旨在培养船员具备在实践中应用知识的能力,并可作为工具书帮助船员上船工作使用。

本套教材由航海英语、船舶操纵与避碰、航海学、船舶结构与货运、船舶管理(驾驶)、(高级)值班水手业务、高级值班水手英语,轮机英语、船舶动力装置、主推进动力装置、船舶辅机、船舶电气与自动化、船舶管理(轮机)、(高级)值班机工业务、高级值班机工英语,电子电气员英语、船舶电气、船舶机舱自动化、信息技术与通信导航系统、船舶管理(电子电气员)、电子技工业务、电子技工英语组成。

本套教材在编写、出版工作中,得到了各直属海事局、各航海院校、海员培训机构、航运企业、人民交通出版社、大连海事大学出版社等单位的关心和大力支持,特致谢意。

中国海事服务中心

2012 年 3 月



编者的话

本书是根据中华人民共和国海事局制定的《中华人民共和国海船船员适任考试大纲》和《STCW 公约》马尼拉修正案编写的,适用于无限航区 500 总吨以上船舶大副适任证书考试培训使用,也可作为航海院校师生的教学参考书。

本书共分十个单元,第一单元船舶航行设备,第二单元航海气象和天气报告,第三单元船舶操纵,第四单元国际避碰规则,第五单元船舶结构与设备,第六单元船舶货运技术,第七单元国际海事公约,第八单元航运法规与业务,第九单元国际安全管理规则,第十单元海事英语写作以及 19 个实用附录与总词汇表。每个单元均包括引言、课文、生词表、难点注释、课后练习以及术语链接与拓展阅读。练习侧重基础,结合考证,强调实用。

本书由多年从事大学英语(22 年)、航海英语(12 年)教学的英语专业教师陈镇炎(集美大学)与高级船长沈江老师(大连海事大学)担纲主编,避免说外行话与错话,这也体现了国际海事英语大会(IMEC)多年来倡导的 Twinning 原则,即海事英语专业教材的理想编者应是语言与技术的结合体,过分强调语言技能,忘了航海两字,或一味认为专业英语无须了解语法,这两种极端观点都是不可取的。

本书具体编写分工如下:

Units One to Six(Unit Six 中的 Lessons One to Lesson Four & Eight)由沈江与陈镇炎共同完成,沈江船长提供课文素材并编写其中的 III Vocabulary and Expressions, IV Notes, Vocabulary and Structure II 的术语翻译与 Vocabulary Link。其余练习均由陈镇炎设计编写。

Unit Six (Lessons Five to Seven) and Units Seven & Nine 由陈镇炎完成。

Units Eight & Ten 由集美大学杨荣波老师完成。

大连海事大学大学的王洪贵老师参加了部分编写工作。

本书最后由陈镇炎统稿。

本书的主审涂兴华船长和刘霓辉副教授(上海海事大学)提出了许

多宝贵的意见,中国海事服务中心的朱耀辉自始至终对本书的编写给予多方面的关心与支持。为此,我们深表谢意。

由于编者水平有限,时间仓促,不足之处和差错在所难免,竭诚希望前辈、同行和读者批评指正。

编 者

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Unit 1

Shipborne Navigational Equipment

I Warming-up

- **ECDIS** or the Electronic Chart Display and Information System means a navigation information system by displaying selected information from a system electronic navigational chart (SENC) with positional information from navigation sensors to assist the mariner in route planning and route monitoring, and if required display additional navigation-related information.

- **GNSS** or the global navigation satellite system is a system of satellites that provide autonomous geo-spatial positioning with global coverage. As of 2010, the United States NAVSTAR Global Positioning System (GPS) is the only fully operational GNSS. The Russian GLONASS is being developed towards full global coverage. The People's Republic of China is in the process of expanding its regional Beidou (Compass) navigation system into the global Compass navigation system by 2020. The European Union's Galileo positioning system is a GNSS in initial deployment phase, scheduled to be fully operational by 2020 at the earliest.

- **VDR** or the Voyage Data Recorder is a "Black Box" for the ship whose objective is to maintain a store, in a secure and retrievable form of information concerning position, movement, physical status, command and control of a vessel over and the period leading up to and following an incident having an impact thereon. The information is for use during any subsequent investigation to identify the cause of incident.

- **AIS** or the automatic identification system (AIS) consists of one VHF transmitter, two VHF receivers, one VHF DSC receiver, and standard marine electronic communications links to shipboard display and sensor systems. Ships fitted with AIS shall maintain AIS in operation at all times except where international agreements, rules or standards provide for the protection of naviga-



tional information.

- **SSAS** or the Ship Security Alert System is intended for transmitting a security alert when the ship is under attack by pirates, terrorists, etc. It notifies the preset flag administration on land that the ship is under threat, without generating any audio/visual alarms to prevent others onboard from sensing that a security alert is transmitted.

- **LRIT** or the Long Range Identification and Tracking system is a designated International Maritime Organization (IMO) system designed to collect and disseminate vessel position information received from IMO member States ships that are subject to the International Convention for the Safety of Life at Sea (SOLAS).

Based on the information listed above and your personal intelligence decide whether the following statements are true or false.

1. The ECDISs will supersede the paper-based chart in the near future.
2. The ECDIS has come into being only because of the widespread use of computers.
3. The ECDIS has every advantage over all the other paper-based charts or maps.
4. The development of GLONASS, Beidou or Galileo is the result of breaking through the monopoly of the global positioning system of the US A.
5. The GNSS is a satellite-based positioning system.
6. Based on the information retrieved from the sunk vessel, investigators can decide for sure what caused the accident.
7. AIS works automatically and independently of international rules and conventions.
8. The letter S in the abbreviated AIS and DSC is not the same.
9. SSAS is a secret way of generating security alerts to any flag administrations.
10. LRIT is advantageous in that vessels beyond the range of the coast can also be identified and tracked.

II Texts

Lesson One ECDIS

Scope of ECDIS

- The primary function of the ECDIS is to contribute to safe navigation.
- ECDIS with adequate back-up arrangements may be accepted as complying with the up-to-date charts.
- *ECDIS should be capable of displaying all chart information necessary for safe and efficient navigation originated by and distributed on the authority of government authorized hydrographic offices.*^①
- ECDIS should facilitate simple and reliable updating of the electronic navigational chart.
- ECDIS should reduce the navigational workload compared to using the paper chart. It



should enable the mariner to execute in a convenient and timely manner all route planning, route monitoring and positioning currently performed on paper charts. It should be capable of continuously plotting the ship's position.

- The ECDIS display may also be used for the display of radar, radar tracked target information, AIS and other appropriate data layers to assist in route monitoring.
- ECDIS should have at least the same reliability and availability of presentation as the paper chart published by government authorized hydrographic offices.
- ECDIS should provide appropriate alarms or indications with respect to the information displayed or malfunction of the equipment.
- When the relevant chart information is not available in the appropriate form, some ECDIS equipment may operate in the Raster Chart Display System (RCDS) mode. RCDS mode of operation should conform to performance standards not inferior to those set out in appendix 7.

Application of these standards

- These performance standards should apply to all ECDIS equipment carried on all ships, as follows:
 - dedicated standalone workstation.
 - a multifunction workstation as part of an INS.
- These performance standards apply to ECDIS mode of operation, ECDIS in RCDS mode of operation and ECDIS backup arrangements
- Requirements for structure and format of the chart data, encryption of chart data as well as the presentation of chart data are within the scope of relevant IHO standards, including those listed in appendix 1.
- In addition to the general requirements set out in resolution A, ECDIS equipment should meet the requirements of these standards and follow the relevant guidelines on ergonomic principles adopted by the Organization.

Lesson Two GNSS

A satellite navigation or sat. Nav system is a system of satellites that provide autonomous geospatial positioning with global coverage. It allows small electronic receivers to determine their location (longitude, latitude, and altitude) to within a few meters using time signals transmitted along a line-of-sight by radio from satellites. Receivers calculate the precise time as well as position, which can be used as a reference for scientific experiments. A satellite navigation system with global coverage may be termed a global navigation satellite system or GNSS.

As of 2010, the United States NAVSTAR Global Positioning System (GPS) is the only fully operational GNSS. The Russian GLONASS is being developed towards full global coverage. The People's Republic of China is in the process of expanding its regional Beidou navigation system into the global Compass navigation system by 2020. The European Union's Galileo positioning system is a GNSS in initial deployment phase, scheduled to be fully operational by 2020 at the earliest.

