IMO示范课程 *1.08*
MODEL COURSE

雷达导航(管理级)
雷达、ARPA、驾驶台团队及搜寻救助

RADAR NAVIGATION AT MANAGEMENT LEVEL
RADAR ,ARPA, BRIDGE TEAMWORK AND SEARCH AND RESCUE

中英对照

中华人民共和国海事局　译

雷达导航(管理级)
雷达、ARPA、驾驶台团队及搜寻救助

RADAR NAVIGATION AT MANAGEMENT LEVEL
RADAR, ARPA, BRIDGE TEAMWORK AND SEARCH AND RESCUE

(中英对照)

中华人民共和国海事局 译

大连海事大学出版社

IMO 示范课程
编 委 会

序

在中华人民共和国海事局的组织下,中文版国际海事组织(IMO)《示范课程》出版发行了,这不仅有助于我国在船员教育、培训和发证方面全面有效地履行《1978 年海员培训、发证和值班标准国际公约》(STCW 78),也标志着我国在由海运大国向海运强国转变的进程方面迈出了重要的一步,是我国海运界的一件大事。

IMO《示范课程》是国际海事组织为了更好地履行 STCW 78 及其他相关公约,根据一些成员国的建议编写而成的。随着航海科技的进步,现代航运对船员知识和技能的要求也不断提高,为了满足培养适应现代航海需要的高素质船员,IMO 在一些成员国的协助下,组织专家设计和编写了这一系列示范课程。示范课程针对 STCW 78 公约对各等级船员知识、能力和适任的要求及标准,按照教学和培训规律,安排了教学和培训大纲、内容、课时、参考书目等。到目前为止,IMO 已经先后出版了英文版课程 47 种,为各成员国特别是以英文为母语的国家有效履行 STCW 78 公约做出了卓越贡献。

为了更好地履行经修正的 STCW 78 公约,一些非英语国家特别是发展中国家考虑到受训船员的语言能力,以该国母语翻译出版了示范课程,目前已经出版了部分法语和西班牙文的版本,但还没有中文版本。目前我国商船船队吨位居世界第 4 位,拥有的海船船员数量大约 50 万,我国在国际海事组织已经连续 8 次当选 A 类理事国。因此,这套中文版示范课程的问世,体现了我国在提高船员素质方面的决心,表达了我国参与国际海事组织活动的积极态度,也是在全球海事界填补空白的一大工程。

在中文版示范课程的编译和出版过程中,航海教育领域和海事系统的专家及编辑出版人员做了大量工作并付出了很大的努力,在此,我对他们的工作及成果表示由衷的谢意。

在航海科技迅速发展的今天,希望海事管理机构、航海教学领域的专家继续研究与跟踪国际海事公约,结合我国国情,不断完善示范课程,大力开展与示范课程相关项目的研究与开发利用,为提高我国海员的整体素质,增强我国海员在国际市场的竞争力作出更大的贡献。

中华人民共和国海事局常务副局长

2005 年 9 月 28 日

Foreword

Since its inception the International Maritime Organization has recognized the importance of human resources to the development of the maritime industry and has given the highest priority to assisting developing countries in enhancing their maritime training capabilities through the provision or improvement of maritime training facilities at national and regional levels. IMO has also responded to the needs of developing countries for postgraduate training for senior personnel in administration, ports, shipping companies and maritime training institutes by establishing the World Maritime University in Malmö, Sweden, in 1983.

Following the earlier adoption of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, a number of IMO Member Governments had suggested that IMO should develop model training courses to assist in the implementation of the Convention and in achieving a more rapid transfer of information and skills regarding new developments in maritime technology. IMO training advisers and consultants also subsequently determined from their visits to training establishments in developing countries that the provision of model courses could help instructors improve the quality of their existing courses and enhance their effectiveness in meeting the requirements of the Convention and implementing the associated Conference and IMO Assembly resolutions.

In addition, it was appreciated that a comprehensive set of short model courses in various fields of maritime training would supplement the instruction provided by maritime academies and allow administrators and technical specialists already employed in maritime administrations, ports and shipping companies to improve their knowledge and skills in certain specialized fields. IMO has therefore developed the current series of model courses in response to these generally identified needs and with the generous assistance of Norway.

These model courses may be used by any training institution and the Organization is prepared to assist developing countries in implementing any course when the requisite financing is available.

W. A. O'NEIL

Secretary-General

前　言

IMO 一开始就认识到人力资源对海运业发展的重要性,并且优先帮助发展中国家,通过提供和改善海员培训设施,来提高它们的海员培训能力。也考虑到发展中国家管理部门、港口、航运公司和海员培训机构的高级职员深造的需要,IMO 于 1983 年在瑞典马尔默建立了世界海事大学。

随着 1978 年海员培训、发证和值班标准国际公约(STCW)的提前实施,许多成员国建议 IMO 应该开展示范培训课程,以配合公约的实施,以及加快信息和技术在航海技术领域的传播和发展。IMO 培训官员在参观了发展中国家的海员培训机构之后认为,示范课程条款能够帮助教员提高现有课程质量,能更有效地满足 STCW 公约要求,并有助于相关公约以及 IMO 大会决议的执行。

此外,我们意识到在各个航海培训领域内一系列全面的短期示范课程将补充海运学院的教育,在特定专业领域内,还可让主管部门、港口和航运公司的管理人员和现有技术专家提高他们的知识和技能。因此,在挪威的大力协助下,IMO 开展了现在的这一系列示范课程以满足通常需求。

任何培训机构都可使用这些示范课程,只要有必需的资金支持,IMO 乐于帮助发展中国家开展任何课程。

W. A. 奥尼尔
国际海事组织秘书长

CONTENTS

目　录

Guidance notes
  Operate ARPA and navigation controls
  Perform radar plotting
  Apply COLREGS in open waters in restricted visibility
  Control navigation in controlled waters
  Control navigation in and near traffic separation schemes
  Manage a bridge team
  Plan and co-ordinate search and rescue

IV

Introduction

■ Purpose of the model courses

The purpose of the IMO model courses is to assist maritime training institutes and their teaching staff in organizing and introducing new training courses, or in enhancing, updating or supplementing existing training material where the quality and effectiveness of the training courses may thereby be improved.

It is not the intention of the model course programme to present instructors with a rigid "teaching package" which they are expected to "follow blindly". Nor is it the intention to substitute audio-visual or "programmed" material for the instructor's presence. As in all training endeavours, the knowledge, skills and dedication of the instructors are the key components in the transfer of knowledge and skills to those being trained through IMO model course material.

Because educational systems and the cultural backgrounds of trainees in maritime subjects vary considerably from country to country, the model course material has been designed to identify the basic entry requirements and trainee target group for each course in universally applicable terms, and to specify clearly the technical content and levels of knowledge and skill necessary to meet the technical intent of IMO conventions and related to recommendations.

■ Use of the model course

To use the model course the instructor should review the course plan and detailed syllabus, taking into account the information provided under the entry standards specified in the course framework. The actual level of knowledge and skills and the prior technical education of the trainees should be kept in mind during this review, and any areas within the detailed syllabus which may cause difficulties because of differences between the actual trainee entry level and that assumed by the course designer should be identified. To compensate for such differences, the instructor is expected to delete from the course, or reduce the emphasis on, items dealing with knowledge or skills already attained by the trainees. He should also identify any academic knowledge, skills or technical training which they may not have acquired.

By analysing the detailed syllabus and the academic knowledge required to allow training in the technical area to proceed, the instructor can design an appropriate pre-entry course or, alternatively, insert the elements of academic knowledge required to support the technical training elements concerned at appropriate points within the technical course.

Adjustment of the course objective, scope and content may also be necessary if in your maritime industry the trainees completing the course are to undertake duties which differ from the course objectives specified in the model course.

Within the course plan the course designers have indicated their assessment of the time which should be allotted to each area of learning. However, it must be appreciated that these allocations are arbitrary and assume that the trainees have fully met all entry requirements of the course. The instructor should therefore review these assessments and may need to re-allocate the time required to achieve each specific learning objective or training outcome.

介 绍

■ 示范课程目的

IMO 示范课程旨在帮助海员培训机构及其教职员工组织和介绍新的培训课程,或者加强、更新、补充现有培训资源,以改善培训课程的质量和效果。

示范课程并非为教员提供呆板的硬性"教学包",要求他们盲目随从,也不是以视听或程式化的材料来代替教员的存在。在示范课程的培训中,教员的知识、技能和奉献对学员知识和技能的传授是最关键的。

因不同国家在海运学科方面,学员所在的教育体系和文化背景差别很大,所以示范课程在设计上以普遍适用的术语确定了每门课程的基本入门要求和受训对象,而且明确指出了技术内容和必须达到的知识和技能水平,以符合 IMO 公约及其相关建议的技术意图。

■ 示范课程使用

讲授示范课程的教员应该仔细阅读课程计划和详细的课程提纲,考虑课程结构指定的入门标准所提供的信息。对学员的实际知识和技术水平及其早期所接受的技能教育要心中有数,因为学员的实际入门水平和课程设计者所设想的会有差距,执行课程提纲的部分内容有可能出现一定的问题,改正措施是教员可以对学员已经掌握的东西酌情删减或者一笔带过,同时也应该确定他们可能不曾掌握的理论知识、技能或未受过的专业训练。

通过分析详细的课程提纲和技术培训所必需的理论知识,教员可以安排一些适当的预科入门课程,也可以在技术课程中合适的地方插入一些理论知识以顺利完成该技术培训。

如果在你们国家海运业中,学员正在完成的课程所承担的职责与在示范课程中所指定的课程目标不一致时,教员也可以对课程目标、范围和内容作出某些调整。

在课程计划里,课程设计者对每部分所需分配的课时作了估计,然而我们要意识到这种分配带有随意性,并且这种课时分配是建立在学员完全达到了课程入门要求的基础之上设定的,因此教员应该仔细分析这个课时分配,需要时还得重新分配课时,以求达到指定的学习目标或培训效果。

■ Lesson plans

Having adjusted the course content to suit the trainee intake and any revision of the course objectives, the instructor should draw up lesson plans based on the detailed syllabus. The detailed syllabus contains specific references to the textbooks or teaching material proposed to be used in the course. Where no adjustment has been found necessary in the learning objectives of the detailed syllabus, the lesson plans may simply consist of the detailed syllabus with keywords or other reminders added to assist the instructor in making his presentation of the material.

■ Presentation

The presentation of concepts and methodologies must be repeated in various ways until the instructor is satisfied that the trainee has attained each specific learning objective or training objective. The syllabus is laid out in learning objective format and each objective specifies a *required performance* or, *what the trainee must be able to do* as the learning or training outcome. Taken as a whole, these objectives aim to meet the knowledge, understanding and proficiency specified in the appropriate tables of the STCW Code.

■ Implementation

For the course to run smoothly and to be effective, considerable attention must be paid to the availability and use of:

- Properly qualified instructors
- Support staff
- Rooms and other spaces
- Equipment
- Suggested references, textbooks, technical papers
- Other reference material.

Thorough preparation is the key to successful implementation of the course. IMO has produced a booklet entitled "Guidance on the implementation of IMO model courses", which deals with this aspect in greater detail.

■ 课程计划

对课程内容作出适合学员的调整和修正课程目标之后,教员应当以详细的课程提纲为基础列出一个课程计划。详细的课程提纲包含专门的教材参考资料或建议在课程中使用的教学资料。如果无须对该课程提纲的课程目标作出调整,那么教员就可用课程提纲里的关键词或提示词句来作此教学计划,以便帮助他讲授本课程。

■ 讲 授

教员要以不同的方法来反复讲述概念和方法,直到学员达到既定学习目标和培训目标,课程提纲以学习目标的形式列出,每一个目标都指明了学员应该达到的成绩或能力,总体上看这些目标在于符合 STCW 公约相应表格中所明确规定的知识、理解和熟练掌握的要求。

■ (课程)实施

为了课程能顺利进行并富有成效,要特别注意必须配备和使用:

- 适任的教员
- 教辅人员
- 房间和其他场所
- 设备
- 建议使用的参考书、教材、技术文件
- 其他参考资料

充分准备是成功开展本课程的关键,IMO 出版的《IMO 示范课程实施指南》,详细地说明了要做的准备工作。

■ Training and the STCW 1995 Convention

The standards of competence that have to be met by seafarers are defined in Part A of the STCW Code in the Standards of Training, Certification and Watchkeeping for Seafarers Convention, as amended in 1995. This IMO model course has been revised and updated to cover the competences in STCW 1995.

In common with the Convention, the course is organised under the seven functions at three levels of responsibility. Specifically, this course covers radar, ARPA, bridge teamwork and search and rescue at the management level.

For ease of reference, the course is divided into separate sections.

Part A provides the framework for the course with its aims and objectives and notes on the suggested teaching facilities and equipment. A list of useful teaching aids, IMO references and textbooks is also included.

Part B provides an outline of lectures, demonstrations and simulator exercises for the course, together with a suggested sequence. No detailed timetable is suggested. This course is very practical and hands-on. From the teaching and learning point of view, it is more important that the trainee achieves the minimum standard of competence defined in the STCW Code than that a strict timetable is followed. Depending on their experience and ability, some students will naturally take longer to become proficient in some topics than in others.

Part C gives the Detailed Teaching Syllabus. This is based on the theoretical and practical knowledge specified in the STCW Code. It is written as a series of learning objectives, in other words what the trainee is expected to be able to do as a result of the teaching and training. Each of the objectives is expanded to define a required performance of knowledge, understanding and proficiency. IMO references, textbook references and suggested teaching aids are included to assist the teacher in designing lessons.

Part D contains an Instructor Manual with additional explanations, exercises and an example lesson plan.

The Convention defines the minimum standards to be maintained in Part A of the STCW Code. Mandatory provisions concerning Training and Assessment are given in Section A-I/6 of the STCW Code. These provisions cover: qualification of instructors; supervisors as assessors; in-service training; assessment of competence; and training and assessment within an institution. The corresponding Part B of the STCW Code contains non-mandatory guidance on training and assessment.

The criteria for evaluating competence specified in the competence tables of Part A of the STCW Code have to be used in the assessment of all competences listed in those tables.

■ 培训和 STCW 95 公约

在经 1995 年修正的海员培训、发证和值班标准国际公约的 STCW 规则 A 部分规定了海员适任标准,IMO 示范课程也作了修正和更新,以满足 STCW 95 公约的要求。

和公约相配套,本课程是根据 3 种责任级别的 7 项职能来组织的,本课程中特别包括了管理级航行职能中的雷达和 ARPA 部分内容。

为便于参考,课程分成不同的部分。

A 部分包括课程结构、目标和目的以及建议使用的教学设备和仪器的备注,并且还包括一个有关的教学辅助设备、IMO 参考文献和教材的清单。

B 部分提供了课程讲授、演示和模拟器练习的大纲、推荐的讲授顺序和时间表。从教和学的角度来看,让学员达到 STCW 规则中所确定的最低适任标准比严格遵守此时间表更为重要。有些学生在某些题目上要达到熟练掌握的程度可能要比他人花更多的时间,这取决于他们各自的经验和能力。

C 部分给出了详细的课程提纲。它是以 STCW 规则中所规定的理论和实践知识为基础,给出的一系列学习目标,换句话说就是通过教育和培训,学员应该获得何种能力。每一目标都被展开,分别说明所要求达到的知识、理解和熟练掌握能力。教员可借助 IMO 参考资料、教材参考资料和推荐的教学资料设计课程。

D 部分包含附有若干名词解释的教员手册、练习题和一个课程计划的范例。

公约在 STCW 规则 A 部分中规定了必须具备的最低适任标准,关于培训和评估的强制性条款规定在 STCW 规则 A - I/6 中。这些强制性条款包含了教员的资格、作为评估员的监督员、在职培训、适任评估和院校内的培训和评估等内容。相应地,STCW 规则 B 部分则包含有关培训和评估的指南,它不是强制性的。

在进行表列的各项适任评估时,必须使用 STCW 规则 A 部分所列明的适任评估标准。