



国家出版基金项目
NATIONAL PUBLICATION FOUNDATION

国际海事组织海员行为示范

MODEL
COURSE 3.05

消防器材及设备的检验

SURVEY OF FIRE APPLIANCES AND PROVISIONS (2004)

中华人民共和国海事局 **译**

中英
对照

大连海事大学出版社
DALIAN MARITIME UNIVERSITY PRESS



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国际海事组织 2004 年第一次出版
4 Albert Embankment, London SE1 7SR

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图书在版编目(CIP)数据

消防器材及设备的检验:汉英对照/国际海事组织著;中华人民共和国海事局译.
—大连:大连海事大学出版社,2016.2

(国际海事组织海员行为示范)

书名原文: SURVEY OF FIRE APPLIANCES AND PROVISIONS

ISBN 978-7-5632-3300-7

I. ①消… II. ①国… ②中… III. ①消防设备—检验—技术培训—教材—汉、英
IV. ①TU998.13

中国版本图书馆 CIP 数据核字(2016)第 029137 号

大连海事大学出版社出版

地址:大连市凌海路 1 号 邮编:116026 电话:0411-84728394 传真:0411-84727996

<http://www.dmupress.com> E-mail: cbs@dmupress.com

大连住友彩色印刷有限公司印装

大连海事大学出版社发行

2016 年 2 月第 1 版

2016 年 2 月第 1 次印刷

幅面尺寸:210 mm×297 mm

印数:1~3000 册

印张: 58

字数: 1801 千

出版人:徐华东

策 划:徐华东

责任编辑:刘长影 宋彩霞

责任校对:张 华 杨玮璐

封面设计:解瑶瑶

版式设计:孟 冀 解瑶瑶

ISBN 978-7-5632-3300-7

定价:145.00 元

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Foreword

Since its inception, the International Maritime Organization (IMO) 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 administrations, ports, shipping companies and maritime training institutes by establishing the world Maritime University in Malmö, Sweden, in 1983.

Following the adoption of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, a number of IMO Member Governments 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 implementation of 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. With the generous assistance of the Government of Norway, IMO developed model courses in response to these generally identified needs and now keeps them updated through a regular revision process, taking into account any amendments to the requirements prescribed in IMO instruments and any technological developments in the field.

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

E.E. MITROPOULOS

Secretary-General

前 言

国际海事组织(IMO)自成立伊始就认识到人力资源在海运业发展中的重要性,并最优先考虑通过在国家和地区层面上提供或改善培训设备来帮助发展中国家增强其海事培训能力。为应对发展中国家主管机关、港口、航运公司及海事培训机构高层人员对研究生培训的需求,IMO于1983年在瑞典的马尔默成立了世界海事大学。

在《1978年海员培训、发证和值班标准国际公约》(STCW)通过的初期,一些IMO成员国政府就建议IMO应制定示范课程,以帮助对该公约的实施以及对航海技术新发展方面信息和技能的迅速转化。IMO培训顾问和咨询专家在对发展中国家的培训机构进行访问后确定,提供示范课程有助于教员改进现有课程的质量,也有助于提升对相关会议和IMO大会决议的实施。

此外,令人欣慰的是,海事培训领域中一套综合性简短课程将对海事院校提供的授课加以补充,并使得已在海事行政机关、港口和航运公司工作的行政管理和技术专家能够提高其在某些专业领域中的知识和技能。为此,在挪威政府的慷慨帮助下,IMO编写了示范课程以应对那些普遍发现的需求,同时考虑到对IMO文件中规定要求的任何修正及该领域内的任何技术发展,通过定期修订程序对示范课程进行更新。

任何培训机构可以使用这些示范课程,在筹措到必需的资金时本组织也准备帮助发展中国家实施任何课程。

E.E.米乔普勒斯

秘书长

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3.05 MODEL COURSE

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 instructor 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 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 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 objectives, 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 learning area. However, it must be appreciated that these allocations are arbitrary and assume that the trainees have fully met all the entry requirements of the course. The instructor should therefore review these assessments and may need to reallocate the time required to achieve each specific learning objective.

介绍

■ 示范课程的目的

IMO示范课程的目的是协助海事培训机构及其教学人员组织和引入新的培训课程,提高、更新或补充现有的培训材料,以此改进培训课程的质量和培训效果。

本示范课程计划的意图并不是向教员呈交一个他们期望“盲目遵循”的“教学包”,其意图也不是用视听或“编排的”材料来代替教员的存在。在所有的培训努力中,知识、技能和教员的奉献是向IMO示范课程材料的受训者传授知识和技能的关键构成要素。

由于不同国家海事学科的教育体系、文化背景不同,示范教材已经就每一科目确定了普遍适用的入学要求及学员目标群体,并清晰详细地列出了其技术内容、知识水平和必要技能以满足国际海事组织公约及相关建议的要求。

■ 示范课程的使用

为使用示范课程,教员应当审视课程计划和教学大纲细则,考虑课程框架中规定的入学标准所提供的信息。在审视过程中,应当牢记学员知识和技能的实际水准以及从前的技术教育水平,并应当识别出在教学大纲细则范围内由于学员实际入门水准与课程设计者假定的水准之间的差异,可能引起困难的任何部分。为弥补这些差异,希望教员将涉及学员已经掌握的知识和技能的项目从课程中删去或不做重视。此外,教员应当识别出学员可能还没有掌握的任何学术知识、技能或技术训练。

通过分析教学大纲细则以及技术领域培训所需的学术知识,教员可以设计出适当的预科课程,或者在技术课程中的适当处加入技术课程需要的学术知识。

如果完成该课程的学员在其所处的航海事业中要从事有别于本示范课程规定的课程目标的职责,则可能有必要调整课程的目标、范围和内容。

在课程计划中,课程设计者已经表明了其估计的、应分配给每一个学习部分的时间。但是,必须清楚的是,这些分配是主观的,并假设了学员完全符合本课程的入门要求。因此,教员应当对这些估计进行重新审视而且可能需要重新分配时间以符合每一个特定培训目标的需要。

■ 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. An example of a lesson plan is shown in the instructor manual on page 96. 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. The syllabus is laid out in learning objective format and each objective specifies what the trainee must be able to do as the learning outcome.

■ Evaluation or assessment of trainee progress

Guidance on evaluation or assessment of trainees is given in Part E of the course. The group assignments in Chapter 6 (Appendix 1) may be sufficient to provide the information, which will show how effective the transfer of knowledge and understanding has been.

■ 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;
- textbooks, technical papers; and
- other reference material.

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

■ 教案

在为适应招收的学员以及课程目标的修正而调整课程内容之后，教员应当基于大纲细则拟定教案。大纲细则中有教科书具体的参考书目以及计划用于课程的教学资料。第 97 页的教员手册中提供了一份教案范例，教案可以包括添加了关键词或提示语的大纲细则，以帮助教员授课，在这种情况下就没有必要调整大纲细则的培训目标。

■ 学员展示

教员应以各种方式重复对概念和方法的讲授，直到其认为学员符合了每一个特定的学习目标。大纲以学习目标的形式列出，每一个学习目标具体列出了学员学习完成后要达到的目的。

■ 评估学员进步

课程 E 部分提供了评估与测试的指导。第 6 章(附件 1)的分组作业能充分显示教学与学习的效果。

■ 实施

为使课程顺利有效进行，必须充分注意下列人员与设备：

- 称职的教员；
- 教辅人员；
- 教室和其他场所；
- 设备；
- 教材、技术资料；和
- 其他参考资料；

完善的备课是课程成功实施的关键。国际海事组织出版了《IMO 示范课程实施指南》，更加详细地解释了教学要求。

Part A: Course Framework

■ Scope

The course is concerned with verification of compliance with the requirements in IMO conventions regarding the safety of ships, navigation and life at sea. It covers the requirements of the initial, annual, intermediate and periodical surveys, as specified in the International Convention for the Safety of Life at Sea, 1974 (SOLAS 74), as amended^{1,2)} and related documents,³⁾ together with the necessary procedures for verification of these requirements including:

- Suggested procedures for the carrying out of Convention requirements and detailed further in “Guidance” or “Recommendation” type documents relating to the Convention;
- Suggested acceptance criteria, i.e. standards, parameters or guidance towards acceptance of the requirements;
- Any other guidance necessary for the satisfactory determination of these survey requirements, with the aim of issuing the relevant certificates defined in the Convention.

The procedures and acceptance criteria described in the course are not to be constructed as providing an authoritative interpretation of the SOLAS convention.

This course does not cover preliminary design or plan approvals, nor does it cover the survey or inspection of chemical tankers, gas carriers, special purpose ships or mobile offshore units.

The course should be supplemented by on-the-job training under the supervision of an experienced ship surveyor.

■ Objectives

The course, supplemented by appropriate on-the-job training, should enable those successfully completing it to:

- Conduct on behalf of their Administrations the surveys and inspections required by the 1974 SOLAS Convention, as amended and the 1988 SOLAS Protocol, as amended, in respect of fire protection, fire detection and fire-extinguishing appliances, including fire control plans and inert gas systems;
- Report as necessary on the results of such surveys and inspections to enable the

1) As amended by the 1988 SOLAS Protocol, the 2001 consolidated edition and the 2000, 2001, and 2002 SOLAS amendments.
2) The interpretation of any convention decided by the contracting parties.
3) Guidelines on Surveys Required by the 1988 SOLAS Protocol, the International Bulk Chemical Code and the International Gas Carrier Code. (Resolution A.948(23)).

A部分:课程框架

■ 范围

课程重点涉及是否满足 IMO 公约关于船舶、航行及海上人命安全的要求。它涵盖了对初次、年度、中间和定期检验的要求,正如《1974 年国际海上人命安全公约》(SOLAS 74)及其修正案^{1,2}和相关文件³中描述的那样,满足上述要求应包括下列:

- 为贯彻公约要求的建议性程序以及与公约相关的详细“指南”或“建议”;
- 建议承认的准则,即标准、参数或符合要求的指南;
- 一切其他满足上述在公约中确定的、以签发相关证书为目的的检验要求的必要指南。

本课程中叙述的程序、认可的准则将不像提供 SOLAS 公约权威解释那样进行注释。

本课程不包括初步的设计或者计划的批准,也不包括对化学品船、气体运输船、特殊用途船或移动式海上油气平台的检验或检查。

本课程如作为在职训练中的补充,则应在有经验的验船师的监督下进行。

■ 目标

本教程通过适当的在职培训的补充应能够达到以下目标:

- 按照《1974 年国际海上人命安全公约》及其修正案和《国际海上人命安全公约》1988 年议定书及其修正案,代表主管机关进行有关防火、探火和灭火设备,包括防火控制图和惰气系统的检验和检查;
- 根据检验和检查的结果使主管部门签发和更新相关船舶的“客船安全证书”、“货船结构

1) 见 SOLAS 公约 1988 年议定书,2001 年统一文本和 SOLAS 公约 2000 年、2001 年及 2002 年修正案。

2) 公约的解释由合同当事人决定。

3) 对 SOLAS 公约 1988 年议定书规定检验的指导、《国际散装化学品规则》和《国际气体运输船规则》[决议 A.948(23)]。

Administration to issue or renew in respect of the ship concerned a Passenger Ship Safety Certificate or a Cargo Ship Safety Construction Certificate and Safety Equipment Certificate and its Supplement, as appropriate, taking into account reports of surveys or inspections of materials, structure and other equipment in respect of which a certificate is to be issued or renewed, and to issue, renew or endorse the attachment to the above-mentioned certificates;

- Identify, specify and require any repair or replacements in the above regards which may be necessary to permit issue or renewal of the above certificates; and
- Monitor the conduct and effectiveness of surveys and inspections of the above nature carried out on behalf of the Administration under delegated authority.

■ **Entry standard**

Those wishing to enter this course should be fully qualified Master Mariners, Chief Engineers, and Naval Architects/Marine Engineers or hold any equivalent qualification and have experience related to the structural survey of ships, ship construction or ship repair work.

Note: This course may also be used in cross-training experienced ship surveyors of other disciplines.

■ **Course certificate, diploma or document**

On successful completion of the course, a document should be issued certifying that the holder has completed a course of training at the required level of knowledge to conduct surveys of machinery. Authorization to conduct machinery surveys on ships should only be granted following successful completion of appropriate on-the-job training.

■ **Course intake limitations**

The ratio of trainees to instructors should not exceed 20:1 in tutorial sessions and 10:1 in practical training sessions.

■ **Staff requirements**

All training and instruction should be given by suitably qualified personnel. The senior instructor should be an experienced surveyor having a good knowledge of international requirements related to constructional fire protection, fire detecting and fire-fighting equipment and inert gas systems as laid down by IMO conventions, Assembly resolutions and MSC Circulars. Those teaching administrative aspects of survey control should also be experienced in these regards. At least one additional instructor with experience as a surveyor should be available if practical training sessions can be arranged.

■ **Teaching facilities and equipment**

For tutorial sessions ordinary classroom facilities and an overhead projector are sufficient. When audio-visual materials are used, the appropriate equipment must be available.

安全证书”和“货船设备安全证书”及补充文件,根据材料、结构和其他设备的检查或检验签发或更新证书,并为上述的证书附件进行签发、更新或背书;

- 为签发或更新上述证书而识别、说明并要求进行修理或更换部件;
- 代表委托的主管机关监控关于上述内容的检验和检查的执行和效果。

■ 入学标准

学员须具有船长、轮机长资格,或者为造船技师/造船工程师以及持有相当的资格和具有船舶检验、造船或修船经验的人员。

注:本课程也可用于交叉培训其他学科有经验的船检师。

■ 课程证书、文凭或文件

本课程结业后,将颁发证书以证明持有者完成了具有相当知识水平的培训,可以进行消防设备和器具的检验。只有成功地完成了适当的在职培训才可得到授权进行船舶检验。

■ 课程人数限制

学员与教员的比例:理论课不超过 20:1,实训课不超过 10:1。

■ 教员要求

所有的培训和教学须由有经验的人员进行。高级讲师应是有经验的验船师,并具有有关 IMO 公约、大会决议和 MSC 文件所确定的关于防火结构、火情探测、灭火设施以及惰气系统的国际要求方面的知识。教学管理部门也应熟悉上述知识。安排实操训练时,至少应另外配备一名具有验船经验的教员。

■ 教学设施和设备

理论教学须备有普通的教室设备和投影仪。使用音像资料时,应配备合适的仪器设备。