



MODEL COURSE

C2001-10

MARINE AIDS TO NAVIGATION –
TECHNICIAN TRAINING
AN INTRODUCTION TO SHORE MARKS

Edition 3.0

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DOCUMENT HISTORY

Revisions to this document are to be noted in the table prior to the issue of a revised document. The latest edition of the Model Course is the only version in force unless the Model Course is explicitly revoked by the Council.

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FOREWORD

The International Organization for Marine Aids to Navigation (IALA) recognizes that training in all aspects of Marine Aids to Navigation (AtoN) service delivery, from inception through installation and maintenance to replacement or removal at the end of a planned life-cycle, is critical to the consistent provision of that AtoN service.

Under the SOLAS Convention, Chapter 5, Regulation 13, contracting governments should undertake to take into account existing international recommendations and guidelines when establishing aids to navigation. A footnote is included referencing inter alia recommendations and guidelines of IALA.

IALA has adopted the normative Recommendation R0141 on Training and Certification of AtoN Personnel. In order to help Members of the Organization, AtoN authorities and other stakeholders worldwide to conform with the provisions of the Recommendation a series of model courses covering elements of training for AtoN personnel have been developed by the Committees and the World-Wide Academy of the Organization (WWA).

It is intended that such courses shall be conducted by a training institute or an organization accredited by a competent authority in a Member State of the Organization or Non-member State. This model course is intended to provide Members, AtoN authorities and other appropriate stakeholders with specific guidance on the training of AtoN technicians in shore marks.

PART 1 – COURSE OVERVIEW

1. SCOPE

This course is intended to provide technicians with the theoretical training necessary to have a basic understanding of the types and functions of fixed AtoN or shore marks.

This introductory course is intended to be supported by further training modules on range, sector, and leading lights, power supplies, lights, and maintenance. Details of these supporting model courses can be found in the Model Course C2000 Level 2 Technician Training Model Course Overview.

2. OBJECTIVE

Upon successful completion of this course, participants will have acquired sufficient knowledge and skill to understand the types and functions of fixed AtoN used by their authorities or organizations.

3. COURSE OUTLINE

This theoretical course is intended to cover the knowledge required for a technician to recognize the types and functions of shore marks. The complete course comprises 2 classroom modules, each of which deals with a specific subject covering fixed AtoN and a site visit.

4. TEACHING MODULES

Table 1 Table of Teaching Modules

Module Title	Time in hours	Overview
An introduction to shore marks	1.5	This module describes types of fixed artificial navigation marks
Purpose of lighthouses and beacons	2.0	This module describes the functions of fixed artificial navigation marks
Site visit	1.5	A site visit to identify types of fixed artificial navigation marks
Evaluation	1.0	Written test
Total Hours	6.0	1 day course

5. SPECIFIC COURSE RELATED TEACHING AIDS

This course will be classroom-based. Classrooms should be equipped with blackboards, whiteboards, and overhead projectors to enable presentation of the subject matter.

Photographs or models of shore marks should be considered as valuable teaching aids.

6. ACRONYMS

To assist in the use of this model course, the following acronyms have been used:

AtoN Marine Aids to Navigation

IALA	International Organization for Marine Aids to Navigation
L	Level
SOLAS	International Convention for the Safety of Life at Sea, 1974 (as amended)
WWA	World-Wide Academy

7. DEFINITIONS

The definition of terms used in this Guideline can be found in the International Dictionary of Marine Aids to Navigation.

8. REFERENCES

In addition to any specific references required by the Competent Authority, the following material is relevant to this course:

- 1 IALA NAVGUIDE.
- 2 IALA Recommendation R0118 for the Recording of Marine Aids to Navigation Positions.
- 3 IALA Recommendation R0111 on Port Traffic Signals.
- 4 IALA Recommendation R0113 for the Marking of Fixed Bridges over Navigable Waters.

PART 2 – TEACHING MODULES

1. MODULE 1 – AN INTRODUCTION TO SHORE MARKS

1.1. SCOPE

This module describes types of fixed artificial navigation marks.

1.2. LEARNING OBJECTIVE

To gain a basic understanding of the types of fixed artificial navigation marks and the lights fitted to them.

1.3. SYLLABUS

1.3.1. LESSON 1 – INTRODUCTION TO FIXED ATON

- 1 Definition of a 'beacon'
- 2 Major beacons – lighthouses
- 3 Minor beacons
- 4 Lit and unlit beacons
- 5 Daymarks and topmarks

1.3.2. LESSON 2 – SPECIALIST FIXED ATON

- 1 Sector, Range and Leading marks (transits)
- 2 Port Traffic Signals
- 3 Marks on bridges over navigable waterways

2. MODULE 2 – PURPOSE OF LIGHTHOUSES AND BEACONS

2.1. SCOPE

This module describes the functions of fixed artificial navigation marks.

2.2. LEARNING OBJECTIVE

To gain a basic understanding the functions of all types of fixed AtoN.

2.3. SYLLABUS

2.3.1. LESSON 1 – THE FUNCTION OF MAJOR BEACONS

- 1 The function of lighthouses
- 2 Typical ranges of lights in major beacons
- 3 Where and why major beacons are established
- 4 Use by mariners to obtain a bearing or line of position
- 5 Manned and automated lighthouses
- 6 Other purposes for which lighthouses can be used

2.3.2. LESSON 2 - THE FUNCTION OF MINOR BEACONS

- 1 Where and why minor beacons are established
- 2 Advantages of fixed structures versus floating AtoN

- 3 Lights fitted to minor beacons
- 4 Function of daymarks
- 5 Function of Port Traffic Signals.
- 6 Function of leading (range) lines

3. SITE VISIT

The purpose of the site visit is to permit participants to consolidate theoretical knowledge gained in the classroom through a visit to a regional port or other coastal area in which several fixed artificial navigation marks are located.

Participants should be tasked to identify the type and function of the fixed AtoN within that area.