



# IALA MODEL COURSE

L2.1.14

AIDS TO NAVIGATION - TECHNICIAN TRAINING

LEVEL 2 MODULE 1 ELEMENT 1.14

AN INTRODUCTION TO SHORE MARKS

**Edition 2.0**

**June 2017**



# DOCUMENT HISTORY

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Date	Details	Approval
31 May 2013	1 <sup>st</sup> issue	Council session 55
16 June 2017	Entire document Scheduled Committee review to edition 2 Page 1 – Title and course number corrected Page 5 / Table 1 – Correction of course hours	Council session 64

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## FOREWORD

The International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) recognises that training in all aspects of 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.

Taking into account that, under the SOLAS Convention, Chapter 5, Regulation 13, paragraph 2; Contracting Governments, mindful of their obligations published by the International Maritime Organization, undertake to consider the international recommendations and guidelines when establishing aids to navigation, including recommendations on training and qualification of AtoN technicians, IALA has adopted Recommendation E-141 on Standards for Training and Certification of AtoN personnel.

IALA Committees working closely with the IALA World-Wide Academy have developed a series of model courses for AtoN personnel having E-141 Level 2 technician functions. This model course on AtoN Service Craft and Buoy Tenders should be read in conjunction with the Training Overview Document IALA WWA.L2.0 which contains standard guidance for the conduct of all Level 2 model courses

This model course is intended to provide national members and other appropriate authorities charged with the provision of AtoN services with specific guidance on the training of AtoN technicians in an introduction to service craft and buoy tenders. Assistance in implementing this and other model courses may be obtained from the IALA World-Wide Academy at the following address:

The Dean  
IALA World-Wide Academy  
10 rue des Gaudines  
78100 Saint Germain-en-Laye  
France

Tel: (+) 33 1 34 51 70 01  
Fax: (+) 33 1 34 51 82 05  
e-mail: [acadamy@iala-aism.org](mailto:acadamy@iala-aism.org)  
Internet: [www.iala-aism.org](http://www.iala-aism.org)

## 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 Aids to Navigation (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 Level 2 Technician training overview document IALA WWA L2.0.

### 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 organizations.

### 3. COURSE OUTLINE

This theoretical course is intended to cover the knowledge required for a technician to recognise 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	2.0	A site visit to identify types of fixed artificial navigation marks
Evaluation	1.0	Written test
<b>Total Hours</b>	<b>6.5</b>	One 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                      Aid(s) to Navigation

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

## 7. DEFINITIONS

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The definition of terms used in this Guideline can be found in the International Dictionary of Marine Aids to Navigation (IALA Dictionary) at <http://www.iala-aism.org/wiki/dictionary>

## 8. REFERENCES

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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 O-118 for the Recording of Aids to Navigation Positions.
- 3 IALA Recommendation E-111 on Port Traffic Signals.
- 4 IALA Recommendation O-113 for the Marking of Fixed Bridges over Navigable Waters.

## PART 2 – TEACHING MODULES

### 1. MODULE 1 – AN INTRODUCTION TO SHORE MARKS

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#### 1.1. SCOPE

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This module describes types of fixed artificial navigation marks.

#### 1.2. LEARNING OBJECTIVE

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

#### 1.3. SYLLABUS

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##### 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

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#### 2.1. SCOPE

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This module describes the functions of fixed artificial navigation marks.

#### 2.2. LEARNING OBJECTIVE

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

#### 2.3. SYLLABUS

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##### 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**

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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.