

**IALA World Wide Academy**

**LEVEL 2 – Technician Training**

**Sound Signals**

**Module 4 Elements 4.1-4.2**

**(L2:4.1-2) Edition 1**

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***AISM***Association Internationale de Signalisation Maritime ***IALA***

International Association of Marine Aids to Navigation and Lighthouse Authorities

10, rue des Gaudines

78100 Saint Germain en Laye, France

Telephone: +33 1 34 51 70 01 Fax: +33 1 34 51 82 05

e-mail: [contact@iala-aism.org](mailto:contact@iala-aism.org) Internet: [www.iala-aism.org](http://www.iala-aism.org)

DOCUMENT REVISIONS

Revisions to the IALA Document are to be noted in the table prior to the issue of a revised document.

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| **Date** | **Page / Section Revised** | **Requirement for Revision** |
| 17.04.2013 | EEP20 final review |  |
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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 Organisation, 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 sound signals 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 sound signals. 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 Tel: (+) 33 1 34 51 70 01

10 rue des Gaudines, 78100 Fax: (+) 33 1 34 51 82 05

Saint Germain-en-Laye e-mail: [contact@iala-aism.org](mailto:contact@iala-aism.org)

France Internet: [www.iala-aism.org](http://www.iala-aism.org)

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# PART A - COURSE OVERVIEW

## Scope

This course is intended to provide technicians with the theoretical and practical training necessary to have a basic understanding of the types and functions of sound signals and a satisfactory understanding how to install a modern sound signal and fog detector.

This introductory course is intended to be supported by further training modules on power supplies and maintenance. Details of these supporting model courses can be found in the Level 2 Technician training overview document IALA WWA L2.0.

## Objective

Upon successful completion of this course, participants will have acquired sufficient knowledge and skill to understand the types of sound signals used by their organizations and to install a modern sound signal and fog detector under supervision.

## Course Outline

This mainly practical course is intended to give participants sufficient competency to install a modern sound signal and fog detector under supervision. The complete course comprises 1 theoretical classroom module; 1 practical module and a site visit.

## Table of Teaching Modules

|  |  |  |
| --- | --- | --- |
| **Module Title** | **Time in hours** | **Overview** |
| An introduction to sound signals | 1 | This module describes the history of sound signals, the IALA policy on their use and modern types of sound signals and fog detectors |
| Sound signal installation | 2 | This module describes how to install a modern short-range electric sound signal and fog detector |
| Site visit | 2 | A visit to an operational sound signal |
| Evaluation | 1.0 | Practical installation test |
| **Total Hours:** | **6.0** | One day course |

## Specific Course Related Teaching Aids

1. This course will be both classroom and workshop based. Classrooms should be equipped with blackboards, whiteboards, and overhead projectors to enable presentation of the subject matter.
2. A demonstration sound signal and fog detector should be made available in a suitable workshop or open air environment.

## References

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

* The NAVGUIDE Chapter 6
* IALA Recommendation E-109 for the Calculation of the Range of a Sound Signal
* Manufactures’ handbooks related to sound signals in use by the Authority

# PART B - TEACHING MODULES

## Module 1 - An introduction to sound signals

## 2.1.1 Scope

This module describes the history of sound signals, the IALA policy on their use and modern types of sound signals and fog detectors.

### Learning Objective

To gain a **basic** understanding of the types of modern sound signals and fog detectors and their use.

### Syllabus

Lesson 1 Background, types and functions of sound signals

1. History of sound signals
2. Mechanical sound signals (bells and whistles)
3. Compressed air sound signals
4. Electric sound signals
   * AC systems
   * DC systems
   * Directional and Omni-directional
5. Fog detectors and their ideal siting
6. Sound signals on major floating AtoN and offshore structures

Lesson 2 Considerations on the use of sound signals

1. IALA and National policy on the use of sound signals
2. Problems with sound signal propagation and background noise
3. Nuisance to local residents

## Module 2 – Sound signal installation

### Scope

This module describes how to install a modern short-range electric sound signal and fog detector.

### Learning Objective

To gain a **satisfactory** understanding of how to install a modern electric sound signal and fog detector

### Syllabus

Lesson 1 Installation of a short range electric sound signal

1. Review of components
2. Health and Safety considerations
3. Assembly of the sound generator on its stand
4. Power supply connection
5. Routine maintenance procedures

Lesson 2 Installation of a fog detector

1. Review of components
2. Assembly of the fog detector
3. Power supply connection
4. Connection between fog detector and sound signal
5. Routine maintenance procedures

Lesson 3 Commissioning and calibration

1. Review of Health and Safety considerations
2. Setting sound characteristic (long blast or Morse)
3. Setting fog detector levels
4. Testing procedures
5. Operational run of sound signal installation

**Assessment**. Participants will be assessed on their competency at the end of Lesson 3.

## Site Visit

### The purpose of the site visit is to permit participants to consolidate the theoretical and practical knowledge gained through a visit to an operational AtoN station fitted with an operational sound signal.

### Participants should be tasked to conduct basic maintenance procedures during this visit.