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Aids to Navigation

Course 1

This presentation is a basic introduction to modern marine aids to navigation for non-technical experts who may be managing aids to navigation programs or who will require a basic understanding of the various types of marine aids to navigation. This full-day course includes communications and publications, beacons and buoys, safety, flashers and changers, bulbs, lanterns, LEDs, solar systems and batteries, and RACONS.

Aids to Navigation Needs Analysis & System Design

Course 2

This seminar, delivered to small groups, will prepare attendees to conduct formal aids to navigation channels and coastal design. The seminar reviews design factors such as, Pilotage waters, Day and/or Night navigation, All user categories and capabilities, Safety from Hazards, Design Visibility, and Minimal Dead Reckoning—density and type of traffic.

The seminar also will enable attendees to determine the requirements for aids to navigation for purposes such as to assist or mark landfalls or pilot boarding stations, mark channels or tracks, mark hazards, either natural or man-made, identify positions or courses, indicate preferred routes, separate traffic, indicate traffic reporting areas, indicate particular areas such as anchorage or quarantine.

Attendees can work through examples to determine the best mix of aids for a geographic area. Practical examples of user consultation are also included as part of the seminar. All necessary documentation is provided.

Aids to Navigation Management

Course 3

This course covers management circle, return on investment, service levels, types of maintenance, reliability, event recording, quality control, consultation with users, and recommending improvements. This course includes:

Introduction to Aids to Navigation Management

- Theory and the operational connection to the strategic plan
- Worldwide practices
- Management circle
- Management Information Systems

Delivery Principles

- Service level derivation-level of service statement
- Extent, Quantity, Quality of service – define – explain.

Delivery Standards

- Types of maintenance
- Reliability – define – explain.
- Event Recording
- Exercises with reliability calculations

Closing the circle

- Quality control
- Consultation with users
- Calculating reliability numbers
- Recommending improvements

Frontline Maintenance

Course 4

This is a five-day course with a recommended attendee number of no more than 10. This course is designed for all those providing technical and operational services in the aids to navigation section. This course can be delivered in Houston or in Singapore.

Day 1

- Introduction to aids to navigation
- Lights, types, sizes, power, range, colors

Day 2

- Introduction to buoys and equipment
- Worker safety
- Installation of light structure and lighting systems

Day 3

- Optics
- Power Supplies
- Lights

Day 4

- Rotating Beacons
- Equipment service criteria
- Routine inspection
- Solar Panels
- Lead Acid Batteries

Day 5 (applied in shop)

- Wiring
- Voltage Regulators
- Test Equipment
- Control of Nav-Aid equipment

Handling Polyethylene Buoys

Course 5

This course will provide technicians with the training necessary to understand the factors affecting the handling, deployment, and recovery of floating aids to navigation and buoys.

1. Introduction
2. Buoy handling
 - 2.1 Loading and stowing buoys
 - 2.2 Alongside buoys
 - 2.2.1 Alongside in a small boat
 - 2.2.2 Alongside with a tender
 - 2.3 Relieving the buoy
 - 2.3.1 Relieving buoys with small craft
 - 2.3.2 Relieving by tender
 - 2.4 Buoy laying
 - 2.5 Towing and recovering buoys.
 - 2.5.1 Towing buoys
 - 2.5.2 Recovering buoys.
3. Glossary

Aids to Navigation Technical

Course 6

A three-day course, like the Front-Line Maintenance course, without a technical shop or field component.

Day 1

- Introduction to aids to navigation
- Types of aids to navigation, buoys, lights, daymarks, radio aids
- IALA aids to navigation systems
- Buoys – shapes, sizes, types, lighting colors
- Lights, types, sizes, power, range, colors

Day 2

- Introduction to buoys and equipment
- Worker safety
- Preparing for installation
- Installation of light structure and lighting systems
- Optics
- Power Supplies

Day 3

- Lights
- Equipment service criteria
- Rotating Beacons
- Solar Panels
- Lead Acid Batteries

Buoy Deck Seamanship

Course 7

Buoy Deck Seamanship is for those who may be working in operation aspects of aids to navigation in river, coastal, and ocean operations.

This course presents the most critical aspects of Aids to Navigation: the operations occurring on a buoy tender. Subjects covered represent the types of equipment and accessories used, including the myriad of buoy tender equipment. The safe use of equipment is highly emphasized. Also included are the details of working with ships and boats in aids to navigation handling.

CHAPTER 1: Introduction

CHAPTER 2: Aids to Navigation Rigging Practices and Safety

CHAPTER 3: Aids to Navigation Tools

CHAPTER 4: Boom/Cranes/Winches and Operator

CHAPTER 5: Ship handling and Boat handling

CHAPTER 6: Ice Operations

CHAPTER 7: Cargo Handling and Stability

CHAPTER 8: Buoy Handling

CHAPTER 9: Aids to Navigation work, Inland Waterways

CHAPTER 10: Aids to Navigation, Construction Tenders

CHAPTER 11: Aids to Navigation Work Ashore in Coastal Waters

CHAPTER 12: Aids to Navigation Teams

CHAPTER 13: Lighthouse Restoration