



**MAESTRO**  
CONSULTANTS

# **NAVIGATION AIDS FOR MODERN FLEETS**

## **COURSE OUTLINE 2020**

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## **TRAINING TITLE**

NAVIGATION AIDS FOR MODERN FLEETS

## **VENUE**

Dubai, UAE

## **DURATION**

5 Days

## **DATES**

15 - 19 March 2020

## **PRICE**

US\$4,000 per attendee including training material/handouts, morning/afternoon coffee breaks and Lunch buffet daily.

## **TRAINING INTRODUCTION**

The aims of the training at this level are to equip candidates with the fundamental knowledge and skills needed to keep a safe navigational watch and to use radar, automatic radar plotting aids (ARPA), electronic chart display and information systems (ECDIS), automatic identification systems (AIS) and other electronic aids to maintain safety of navigation.

## **TRAINING OBJECTIVES**

### **Upon successful completion of this course, the delegates will be able to:**

- ✓ Examine the fundamental of modern ship navigation aids techniques and its procedures and assess reliability, accuracy and limitations as part of Integrated Navigation Systems
- ✓ To examine and evaluate the application of new technology to the safe navigation and control of the ship

## **TRAINING AUDIENCE**

- Staff from all port related fields
- Staff from all shipping related fields

## **TRAINING OUTLINE**

### **DAY 1**

- Introduction - ECDIS functions, capabilities and limits - Data contents and structure - IMO Performance Standards.
- IMO carriage requirements - Backup, database updating, RCDS mode - Legal, regulatory, liability, safety and economic issues- IMO model course on ECDIS training - Special applications: VTS, SAR, etc.
- ECDIS sensors: GPS, gyro, log- ECDIS and radar- ECDIS and Track Control- ECDIS and AIS - AIS and radar

### **DAY 2**

- Introduction to Satellite navigation-GPS Characteristics- GPS Satellite orbits- GPS – Architecture - GPS Principle idea of work – Satellites Ranging - Determining the position of a satellite- Determination of the user's position
- Satellite frequencies- [GPS modernization](#) - Coded signals - determined the atmosphere delay - Navigation message- Determination of the user's velocity - GPS - Sources of Error.
- Datum Difference – DGPS Principle idea of work- the methods of getting the DGPS corrections – the advantage, disadvantage and accuracy of the system.

### **DAY 3**

- Introduction (why do we need a VDR?) - purpose of the VDR – overview of VDR system - the configuration of the equipment - The final data storage medium- Annual performance test
- VDR Carriage requirements S-VDR Carriage requirements - IMO requirements for VDR data - The uses of VDR - Performance evaluation
- Case study ( the passenger ship Al Salam Boccaccio 98 accident)

## **DAY 4**

- Introduction - Echo sounder (description & principles) – Echo Sounder (description & principles) - Echo sounder transducers types- Echo sounders operation, apply the information correctly.
- Echo sounders errors - Doppler speed log modes (WTM – BTM) – Doppler speed log principles of work.
- Janus configuration - Doppler speed log (Krupp configuration) - The uses of the log, its advantages and accuracy.

## **DAY 5**

- Introduction and AIS System Overview - General Objectives of AIS –
- AIS – Essential Ship's Data - AIS "Messages"- AIS Installation and Display - SOLAS AIS Carriage Requirements - Advanced Applications of AIS.
- AIS Channels, Propagation, Coverage - Position Report - Ship's Data – AIS Data: Navigational Status – AIS Target Tracking and Collision Avoidance - Inherent Limitations of AIS - Guide Lines for the Operational Use of Universal Shipborne AISIntroduction to LRIT - overview of the operational concept of LRIT and its aspects – Introduction to BNWAS – Description of the basic operational sequence of events once BNWAS is operational – its performance standards. What is BNWAS?

## **TRAINING CERTIFICATE**

**MAESTRO CONSULTANTS** Certificate of Completion for delegates who attend and complete the training course

## **METHODOLOGY**

Our courses are highly interactive, typically taking a case study approach that we have found to be an effective method of fostering discussions and transferring knowledge. Participants will learn by active participation during the program through the use of individual exercises, questionnaires, team exercises, training videos and discussions of "real life" issues in their organizations. The material has been designed to enable delegates to apply all of the material with immediate effect back in the workplace.