

**Training Title**

**NAVIGATION AIDS FOR MODERN FLEETS**

**Training Duration**

5 days

**Training Venue and Dates**

REF SM021	Navigation Aids for Modern Fleets	5	07 – 11 July 2025	\$5,500	Dubai, UAE
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In any of the 4 or 5-star hotels. The exact venue will be informed once finalized.

**Training Fees**

- \$5,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch.

**Training Certificate**

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

**INTRODUCTION**

Modern fleets rely on a combination of traditional and advanced navigation aids to ensure safe and efficient travel. These include GPS, radar, Automatic Identification Systems (AIS), Electronic Chart Display and Information Systems (ECDIS), and traditional tools like lighthouses and compasses. These technologies provide real-time situational awareness, precise route planning, and enhanced safety, while addressing the growing demands of global shipping. However, increased reliance on electronics also presents challenges in terms of cybersecurity, human error, and system reliability.

**TRAINING AIM**

To examine and evaluate the application of new technology to the safe navigation and control of the ship

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**TRAINING OBJECTIVES**

Examine the fundamental of modern ship navigation aids techniques and its procedures and assess reliability, accuracy and limitations as part of Integrated Navigation Systems

**TRAINING METHODOLOGY**

Our approach in teaching is to consider your trainees as the future business-leaders in their field, not merely as persons who are attempting to complete a training program. Our goal is to place your staff on the cutting edge of knowledge in making them the Globally Skilled Professionals. A great deal of time will be spent in skill practice and practical work. Our

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training methodology would involve Intensive role- plays, exhaustive case studies, Animated group - discussions. A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivate everybody to find the right answers. The delegates will also be encouraged to raise their own questions and to share in the development of the right answers using their own analysis and experiences.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work & Practical Exercises
- 20% Videos & Software

#### WHO SHOULD ATTEND

- Maritime Operators
- Fleet Managers
- Marine Engineers
- Port Authorities
- Maritime Safety and Compliance Officers
- Naval Personnel
- Shipping and Logistics Companies
- Technology and System Providers
- Researchers and Academia

#### COURSE SUBJECTS:

- Electronic Chart Display and Information System (ECDIS)
- Global Positioning System ( GPS ) and Differential GPS
- Voyage Data Recorder ( VDR ) and Simplified VDR
- Echosounder and Doppler speed log
- Automatic Identification System ( AIS ) , Long Range
- Identification and Tracking (LRIT ) and Bridge Navigation
- Watch Alarm System ( BNWAS )

#### EVALUATION OF TRAINING:

The purpose of evaluation is to improve the quality of training , considering aspects such as trainer delivery , methods , content; to assess the effectiveness of the overall programme, to justify the programme and to justify the role of training.

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## COURSE TOPICS

### 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
- Discussions

### 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.
- Discussions

### 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 to study ( the passenger ship Al Salam Boccaccio 98 accident)
- discussions

### Day 4

- Introduction - Echo sounder (description & principles) – Echo Sounder (description & principles) - Echo sounder transducer types- Echo sounders operation, apply the information correctly.

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- 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.
- Discussions

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 AIS
- Introduction 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.
- Open discussions and evaluation

Case Studies, Discussions and Last Day Review & Assessments will be carried out.

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