

Training Title

NAVIGATION AIDS FOR MODERN FLEETS

Training Duration

5 days

Training Venue and Dates

REF SM021	Navigation Aids for Modern Fleets	5	28 July - 01 August 2025	\$6,500	London, UK
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In any of the 4 or 5-star hotels. The exact venue will be informed once finalized.

Training Fees

- \$6,500 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 advanced navigation aids to ensure safe and efficient operations. These aids, including GPS, radar, AIS, ECDIS, and satellite systems, provide real-time data to guide vessels, avoid hazards, and optimize routes. They enhance safety, reduce operational costs, and improve fleet coordination. As technology evolves, autonomous ships and AI-driven systems are set to further transform maritime navigation, offering greater accuracy, efficiency, and autonomy in fleet management.

TRAINING AIM

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

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

WHO SHOULD ATTEND

- Fleet Operators & Managers
- Maritime Engineers & Technicians
- Naval Architects & Shipbuilders
- Navigators & Officers
- Regulatory Authorities & Inspectors

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- Maritime Safety Experts
- Technology Providers & Developers
- Shipping Industry Analysts & Consultants
- Logistics and Supply Chain Managers
- Education & Training Institutions

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 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

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 passanger 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.

- 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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P.O BOX 45304
ABU DHABI, U.A.E

T +971 2 6264455
F +971 2 6275344

www.definettraining.com